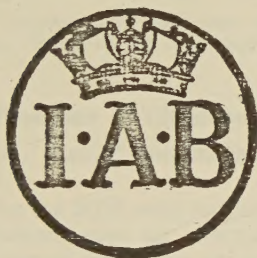


HELMINTHOLOGICAL ABSTRACTS

incorporating
BIBLIOGRAPHY OF HELMINTHOLOGY
For the Year 1940.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)

Winches Farm Drive, Hatfield Road,
St. Albans, England.

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HELMINTHOLOGICAL ABSTRACTS

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FOR THE YEAR 1940.

Vol. IX, Part 4.

228—Acta Brevia Neerlandica de Physiologia, Pharmacologia, Microbiologia e.a.

- a. OESTREICHER, F. & KOK, D. J., 1940.—“On the anthelmintic action of oxidizing substances.” 10 (1/2), 22-23.

(228a) Oestreicher & Kok found that hydrogen peroxide, sodium permanganate, and sodium hyperborate were poisonous to earth worms and concluded that “oxygen-yielding substances are noxious to worms”. After treating two dogs with hydrogen peroxide and sodium permanganate, the stools were found to be free of worm eggs. [No figures are given.]

W.P.R.

229—American Journal of Clinical Pathology.

- a. GOULD, S. E., 1940.—“Incidence of trichinosis among county hospital patients in the Detroit area. Based on 500 consecutive autopsies.” 10 (7), 431-459.

230—American Journal of Diseases of Children.

- a. KUITUNEN-EKBAUM, E., 1940.—“Intestinal parasites in children in Toronto.” 60 (3), 518-525.

(230a) A pinworm survey, by the NIH swab technique, of 843 children in 3 children's hospitals in Toronto gave an infection rate of 48.48%, 32.09% and 73.15%, with an average for all age groups of 48.63%. The highest infection rate occurred in the age group 6 to 8 years at the Imperial Order of the Daughters of the Empire Preventorium and reached 84.22%. *Dibothriocephalus latus* which occurred only once was found in a Jewish girl aged 6 years. *Taenia saginata* segments occurred in the stools of a 5-year-old boy. Eggs of *Ascaris lumbricoides* were detected in the faeces of 4 children. *Trichuris trichiura* eggs were scanty in a 13-year-old boy.

R.T.L.

231—American Journal of Hygiene. Section D. Helminthology.

- a. BRACKETT, S., 1940.—“Studies on schistosome dermatitis. VIII. Notes on the biology of the snail hosts of schistosome cercariae in Wisconsin and epidemiological evidence for the life cycles of some avian schistosomes.” 32 (3), 85-104.
- b. MCCOY, O. R., 1940.—“Rapid loss of *Trichinella* larvae fed to immune rats and its bearing on the mechanism of immunity.” 32 (3), 105-116.
- c. LEONARD, A. B., 1940.—“The accelerated tissue response to *Cysticercus pisiformis* in passively immunized rabbits.” 32 (3), 117-123.
- d. PAYNE, G. C. & PAYNE, F. K., 1940.—“Relative effectiveness of iron and anthelmintics in the treatment of hookworm anemia.” 32 (3), 125-132.

(231a) Where *Cercaria physellae* from various *Physa* is the cause of "swimmer's itch" in lakes in southern Wisconsin, the disease is contracted early in the summer. In lakes of northern Wisconsin *C. stagnicolae* persists as the cause until after midsummer. R.T.L.

(231b) McCoy has examined the fate of *Trichinella* larvae fed to rats that had previously been immunized by 3 or more sublethal doses of larvae. The animals developed an intense diarrhoea shortly after the test dose and the majority of the larvae were eliminated as a result of violent peristalsis 8 to 18 hours after feeding. There was an increased secretion of mucus but there is no evidence that humoral antibodies play any part in the expulsion of the larvae. There is, however, evidence of a positive host reaction that is manifested by increased mucus secretion and peristalsis. P.A.C.

(231c) Leonard immunized a number of rabbits by intravenous injections of serum from animals in the fourth week of a heavy *Cysticercus pisiformis* infection, and then fed 2,000 ova of *T. pisiformis*. Such immunized rabbits showed an accelerated host-tissue response resulting in encapsulation of the developing larvae after 5 to 7 days. Fibrocytes were abundant on the fourth day. In the case of immunized animals, comparatively few of the larvae reached the liver, and mortality within the liver was great, often 100%. Further, polymorphonuclear neutrophils were absent but large macrophages developed round the arrested larvae in the liver. P.A.C.

(231d) Although the administration of iron in cases of hookworm anaemia was followed by a rapid and striking increase in the haemoglobin, there was a definite fall in the haemoglobin level within 5 months if the parasites were not removed. Anthelmintic treatment supplemented by a small amount of iron gave the most satisfactory results. R.T.L.

232—American Journal of Medical Technology.

- *a. BAKER, M. A., 1940.—"Hookworm; history, identification, and modes of infection, with laboratory reports in 15 cases." 6, 235-245.

233—American Journal of Roentgenology and Radium Therapy.

- a. LEADER, L. O. & GOLDBERG, B., 1940.—"Echinococcus cyst of the left lobe of the liver; report of a case." 44 (2), 207-208.

234—American Journal of Surgery.

- a. GREENE, E. I. & GREENE, J. M., 1940.—"Appendiceal oxyuriasis." 48 (2), 440-443.

(234a) The authors describe 8 cases of oxyuriasis of the appendix, 7 of which were diagnosed as acute appendicitis. They state that no symptom or lack of symptoms can distinguish this appendicitis from a true acute one and that the removal of the appendix appears to cure the patient. M.R.Y.

* Original not available for checking or abstracting.

235—American Journal of Tropical Medicine.

- a. BERCOVITZ, Z., 1940.—“Residual symptoms in patients following recovery from acute infestation with trichinosis.” 20 (6), 849-857.

(235a) The after-histories of 70 cases of acute trichinosis showed that all symptoms had disappeared after about one year even in the worst cases, while in 52 of the cases there were no residual symptoms after the first month.

R.T.L.

236—American Journal of Veterinary Research.

- a. GASSNER, F. X. & THORP, jr., F., 1940.—“Studies on *Thysanosoma actinioides*. Part II.” 1 (1), 36-43.
 b. HOWELL, C. E. & STEWART, M. A., 1940.—“Preliminary studies on the effects of diet upon internal parasites in horses.” 1 (1), 58-62.
 c. JERSTAD, A. C., 1940.—“A review of the life history of *Spirocerca lupi* (= *S. sanguinolenta*), the esophageal worm of the dog.” 1 (1), 73-75.

(236a) Hexacanth embryos of *Thysanosoma actinioides* collect in groups of 5 to 12 in pouches connected with the gravid uterus. These pouches become cut off and form fibrous capsules and serve as a protection for the embryos. The complete life-history is not known.

P.A.C.

(236b) Because of unofficial statements affirming an anthelmintic action of prunes in horses, Howell & Stewart endeavoured by faecal egg-counts to show what effect on strongyle and *Parascaris* infections in Percheron horses was obtained by a diet including about 16 lb. of prunes, and also by a vitamin A deficient diet. While the authors were unable to confirm the anthelmintic action of prunes, the statistical analysis of egg-counts led them to consider that the horses were indeed more susceptible to strongyle infestation and that the vitamin A group seemed to possess a greater susceptibility to *Parascaris equorum*.

J.W.G.L.

(236c) Jerstad throws doubt on the suggestion put forward by Mundhenk & Green [see Helm. Abs., Vol. VIII, No. 325c] that *Spirocerca lupi* (= *S. sanguinolenta*) produces microfilariae which circulate in the blood stream. He shows that eggs pass out of the oesophageal tumours and are excreted in the faeces. Though they are fully embryonated, hatching does not occur. Jerstad suggests that probably a coprophagous beetle may be found to be the vector and that this species will fall into line with related species.

P.A.C.

237—American Midland Naturalist.

- a. HUGHES, R. C., 1940.—“The genus *Oochoristica* Lühe 1898.” 23 (2), 368-381.
 b. SCHULTZ, R. L., 1940.—“The genus *Diorchis* Clerc 1903.” 23 (2), 382-389.
 c. HAMANN, C. B., 1940.—“Notes on *Aproctella nuda* sp. nov., a filarioid nematode from the chimney swift, *Chaetura pelagica* (Linn.).” 23 (2), 390-392.
 d. SCHMIDT, F. L. & HUBBARD, W. E., 1940.—“A new trematode, *Neoremfifer serpentis*, from the water moccasin.” 23 (3), 729-730.

(237a) Hughes has worked out a key for the easier identification of species of the genus *Oochoristica*, with short anatomical notes. He adds a catalogue of hosts. P.A.C.

(237b) Schultz has examined the genus *Diorchis* and gives a key for the identification of the species and a host list. *Diorchis americana turkestanica* Skrjabin, 1914, is recognized as a distinct species. Specimens identified by Ransom in 1909 as *D. acuminata* are listed as a separate species, *D. ransomi* nom. nov., and *D. wigginsi* nom. nov. is made for *D. nyrocae* Long & Wiggins, 1939, pre-occupied. P.A.C.

(237d) Schmidt & Hubbard describe and figure *Neorenenifer serpentis* n. sp. from the oesophagus of *Agkistrodon piscivorus*. The absence of cuticular spines, the position of the genital pore and the arrangement of the vitellaria distinguish the new species from other members of the genus. A.E.F.

238—Analecta Médica.

- *a. MATUTE, A., 1940.—“Apendicitis aguda y obstrucción intestinal por ascarides.” 1, 23-25.

239—Annals of Applied Biology.

- a. METCALFE, G., 1940.—“*Bacterium rhaponticum* (Millard) Dowson, a cause of crown-rot disease of rhubarb.” 27 (4), 502-508.

(239a) Metcalfe gives a full description of *Bacterium rhaponticum*, the causal organism of a bud and corm rot of cultivated rhubarb. He discusses its association with the stem eelworm, *Anguillulina dipsaci*, also frequently found in rhubarb plants, and concludes that though the eelworm is probably not a primary agent of disease it may play the part of an infective agent by introducing the pathogenic bacterium. T.G.

240—Annals of Internal Medicine.

- a. WARREN, M., DRAKE, E. H. & HAWKES, R. S., 1940.—“Some observations on persistence of the Bachman skin test and of eosinophilia after recovery from trichinosis.” 13 (11), 2141-2146.

(240a) In investigating the skin reactions of patients affected with trichinosis, Warren, Drake & Hawkes find that the skin test, as carried out by Bachman, remains positive for 3 years if the patient has shown clinical symptoms. The reaction becomes less marked towards the end of this period. In sub-clinical trichinosis the skin test is negative after 3 years. Eosinophilia disappears after recovery. P.A.C.

241—Annals of Tropical Medicine and Parasitology.

- a. HAWKING, F., 1940.—“Onchocerciasis in Tanganyika Territory.” 34 (3/4), 211-215.

(241a) Although onchocerciasis occurs in Tanganyika, only a few cases were observed in natives from the districts around Tukuyu, Njombe and Mufindi. A description is given of the breeding places of *Simulium* spp. at Njombe. R.T.L.

* Original not available for checking or abstracting.

242—Archives of Dermatology and Syphilology.

- a. BRACKETT, S., 1940.—“Pathology of schistosome dermatitis.” 42 (3), 410-418.

(242a) The schistosome dermatitis studied by Brackett was the type widespread in the lake regions of the north-central states of U.S.A. and of the neighbouring provinces in Canada. These lesions, which are usually caused by *Cercaria stagnicola*, *C. elvae* and *C. physellae*, are popularly known as “swimmer’s itch”. The cercariae penetrate but do not develop within the human body. In Europe a similar infection is caused by *C. ocellata*. The histology of the lesions is described and illustrated. The cercariae are destroyed in the epithelial layer and do not reach the deeper tissues. An acute inflammatory response with pronounced oedema and extensive early infiltration of neutrophils and lymphocytes is followed later by extensive invasion of eosinophiles.

R.T.L.

243—Archivio Italiano delle Malattie dell'Apparato Digerente.

- *a. VANNI, V., 1940.—“Pseudo-ossiurosi da larva di *Sarcophaga albiceps*.” 9, 169-173.

244—Archivos de Pediatría del Uruguay.

- *a. DÉVÉ, F., 1940.—“Le kyste hydatique primitif de l'enfant; ses caractères anatomo-pathologiques.” 11, 292-298.

245—Archivos Uruguayos de Medicina, Cirugía y Especialidades.

- *a. ALVAREZ PREVE, A., BAZZANO, H. C. & VIDAL, H., 1940.—“Consideraciones sobre un caso de cisticercosis.” 16, 347-357.

246—Athena. Rassegna Mensile di Biologia-Clinica e Terapia.

- *a. PUTZU, F., 1940.—“Sulla diagnosi biologica dell'echinococcosi.” 9, 137-142.

247—Australian Journal of Experimental Biology and Medical Science.

- a. LIPSON, M., 1940.—“An examination of the urine of sheep dosed with phenothiazine.” 18, 269-272.

(247a) Sheep dosed with phenothiazine passed 10% in the urine in 26 hours as leuco bases of thionol and phenothiazone.

R.T.L.

248—Australian Veterinary Journal.

- a. ROBERTS, F. H. S., 1940.—“The incidence, prevalence and distribution of the helminths infesting the lungs and alimentary tract of the pig in Queensland.” 16 (6), 259-266.

(248a) Fourteen species of helminths were found in 243 bacon pigs from the Atherton Tableland, North Coast and Darling Downs, which

* Original not available for checking or abstracting.

are the principal pig-raising districts of Queensland. Of these, *Ascaris lumbricoides*, *Hyostrongylus rubidus*, *Physocephalus sexalatus*, *Ascarops strongylina* and *Oesophagostomum* spp. are economically the most important. Three specimens of *Necator americanus* occurred in a pig from the Atherton Tableland.

R.T.L.

249—Boletim da Sociedade de Medicina e Cirurgia de São Paulo.

- *a. OLIVEIRA MATTOS, J. DE, 1940.—“Valor terapeutico da esplenectomia na schistosomíase mansônica com esplenomegalia (a proposito de dois casos).” 24, 61-98.

250—Boletines de la Sociedad de Cirugía de Rosario.

- *a. VÁZQUEZ ROLFI, D., 1940.—“La hidatidosis ósea y articular.” 7, 47-87.
- *b. CAMES, O. J., 1940.—“Distomatosis por Fasciola hepática.” 7, 169-174.

251—Boletines y Trabajos. Academia Argentina de Cirugía.

- *a. VALLE, jr., D. DEL & GARRÉ, E. S., 1940.—“Quiste hidático de riñón. Cirugía conservadora.” 24, 168-182.
- *b. LAGOMARSINO, E., 1940.—“Quiste hidatídico del mediastino anterior. Operación. Curación. Hidatidosis de la pelvis ósea.” 24, 201-214.
- *c. ALLENDE, J. M., 1940.—“Quistes hidáticos del riñón. Cirugía conservadora.” 24, 258-269.
- *d. CALCAGNO, B. N., 1940.—“Terapéutica biológica de la hidatidosis.” 24, 567-585.

252—Botany and Zoology.

- a. MIYATA, I., 1940.—“On two deformities of trematode parasitic on dogs and rats.” 8 (6), 1059-1062. [In Japanese.]
- b. INOUÉ, I., 1940.—“Studies on the biology of *Chordodes* sp. (A preliminary note).” 8 (9), 1445-1454. [In Japanese.]

253—Brain.

- a. LANGMAID, C. & ROGERS, L., 1940.—“Intracranial hydatids.” 63 (2), 184-190.

254—Bratislavské Lekárske Listy.

- *a. BULLA, J., 1940.—[Ileus due to ascariasis.] 20, 167-170.

255—British Medical Journal.

- a. CAWSTON, F. G., 1940.—“Anthiomaline in bilharziasis.” [Correspondence.] Year 1940, 2 (4173), p. 918.

(255a) The use of 2 c.c. ampoules of anthiomaline in bilharziasis is to be deprecated as it fosters the use of inadequate doses.

R.T.L.

* Original not available for checking or abstracting.

256—Bulletin des Eidgenössischen Gesundheitsamtes.

- a. KREIS, H. A., 1940.—“Zur Frage der Verwurmung in der Schweiz.” No. 31, [Reprint 11 pp.]

(256a) Kreis reports that, of 684 faecal samples examined at the Basle Institute of Hygiene during the years 1936 to 1940, 28 were positive for *Ascaris*, 81 for *Trichuris*, 35 for *Enterobius*, 3 for other worms, and 537 were negative [it would appear from this that there were no mixed infestations]. He discusses generally the problem of human helminthiasis in Switzerland.

B.G.P.

257—Bulletin de la Société de Pathologie Exotique.

- a. MOREAU, P., 1940.—“Note au sujet d'un oeuf de configuration spéciale rencontré dans les selles à Madagascar.” 33 (4), 295-296.

258—Canadian Journal of Comparative Medicine.

- a. SWALES, W. E. & CHOQUETTE, L., 1940.—“Diagnostic et traitement des maladies parasitaires du mouton dans la Province de Québec.” 4 (10), 292-294.
 b. CAMERON, T. W. M., 1940.—“*Ollulanus* [= *Ollulanus*] *tricuspis* in the cat in Canada.” 4 (10), p. 296.
 c. MILLER, M. J., 1940.—“Black spot in fishes.” 4 (11), 303-305.
 d. SWALES, W. E., 1940.—“The use of phenothiazine in veterinary parasitology.” 4 (12), 333-341.

(258a) In the Province of Quebec, Swales & Choquette have shown that the chief stomach worm of sheep is *Haemonchus*, and that it is present in maximum numbers during July and August. They recommend copper and nicotine sulphates given to sheep in spring and to lambs in July. In autumn, hookworms and trichostrongyles cause a verminous enteritis against which phenothiazine is recommended. In late autumn and winter nodular enteritis due to *Oesophagostomum columbianum* is prevalent: here again, phenothiazine (35-40 g.) is given to sheep in the spring. In Quebec, phosphate deficiency of the pastures probably aggravates helminthiasis.

B.G.P.

(258b) Cameron records *Ollulanus tricuspis* from the stomach of a cat in Quebec Province—the first Canadian record.

B.G.P.

(258c) “Blackspot” in fishes is due to the deposit of pigment around trematode cysts. In *Perca flavescens*, *Esox lucius* and *Semotilus atromaculatus* it is due to cysts of *Crassiphiala bulboglassa* which as an adult lives in the kingfisher, *Ceryle alcyon*. “Blackspot” in *Salvelinus fontinalis* is caused by *Apophallus imperator*, and as this species infects kittens experimentally it may develop in man although so far it has not been recorded. Field experiments with copper carbonate did not confirm an efficacy shown in the laboratory against the molluscan intermediaries.

R.T.L.

(258d) Swales emphasizes the importance of giving large springtime prophylactic doses of phenothiazine to Canadian sheep. He points out that doses as small as 20 to 25 g. in the form of powder, suspension in liquid, or in tablet form are very unsatisfactory and advises 33 to 40 g. for ewes of small

breeds, 40 to 50 g. for ewes of large breeds and for rams, and 30 to 40 g. for yearling stock. For lambs in midsummer 10 g. and for young stock in autumn 20 to 25 g. are recommended. Routine treatments for the control of nodular worms in sheep even with large doses are unsatisfactory once the pastures have become thoroughly contaminated by untreated stock. There are data to show that repeated doses are dangerous. Recent literature is listed and summarized.

R.T.L.

259—Canadian Journal of Research. Section B. Chemical Sciences.

- a. COLLIER, H. B., 1940.—“Enzyme inhibition by derivatives of phenothiazine and of sulphanilamide.” 18 (11), 345-350.

(259a) Collier found that though phenothiazine itself did not inhibit mammalian catalase (a Zeile and Hellström guinea-pig liver preparation) or cytochrome oxidase (a Keilin and Hartree beef heart preparation) derivatives possessing phenolic hydroxyl groups were strong inhibitors. It is suggested that inhibition of haemin catalysts explains the vermifugal action of phenolic compounds. Phenothiazine and thionol had no action on *Ascaris lumbricoides* in vitro. Hydroxy-sulphanilamide inhibited both catalase and cytochrome oxidase action. Sulphanilamide and sulphapyridine had little effect.

W.P.R.

260—Canadian Journal of Research. Section D. Zoological Sciences.

- a. PARNELL, I. W., 1940.—“Studies on the bionomics and control of the bursate nematodes of horses and sheep. VIII. Comparisons of the lethal effects of some chemicals containing sulphur on the free-living stages of sclerostomes.” 18 (11), 371-394.
- b. LYSTER, L. L., 1940.—“Parasites of some Canadian sea mammals.” 18 (12), 395-409.
- c. MILLER, M. J., 1940.—“Parasites of freshwater fish. III. Further studies on the internal trematodes of fish in the central St. Lawrence watershed.” 18 (12), 423-434.

(260a) The effect of sulphur-containing chemicals on 40 g. cultures of fresh horse faeces is studied by Parnell in relation to their sterilizing properties from the point of view of the free-living stages of sclerostomes. Potassium xanthogenate in weak solution was the most effective of the group, sterilizing 160 times its weight of horse faeces; carbon disulphide comes next sterilizing 32 times its weight. Sulphates and sulphites of the common metals were also tested but were less effective. Full details are given of the number of larvae recovered after treatment with varying strengths and amounts of the individual drugs.

J.W.G.L.

(260b) Four nematodes, 2 Acanthocephala, and an unidentified species of *Diphyllbothrium* are recorded from 5 species of whales and seals of Arctic and sub-arctic Canada. Three of these records are new, while *Phocascaris netsiki* n. sp. from *Phoca hispida* is described for the first time. Hair-like processes occurring in clusters at the beginning of the direct portion of the vas deferens of *Ascaris typica* and *A. dussumierii* are thought to be flagella.

R.T.L.

(260c) Miller describes 3 new species of internal trematodes from Canadian freshwater fish and gives systematic notes on others. *PLAGIORCHIDAE*: *Parastiotrema ottawanensis* n. g., n. sp. (near to *Astiotrema* and *Alloglossidium*); *GORGODERIDAE*: *Phyllodistomum lysteri* n. sp.; *ALLOCREADIIDAE*: *Plagioporus serratus* n. sp. (unique in this genus in having a spinous cuticle). *P. serotinus* Stafford, 1904 is redescribed and the genus *Caudotestis* Yamaguti, 1934 is reduced to synonymy with *Plagioporus* Stafford, 1904. *Anallocreadium pearsei* Hunter & Bangham, 1932 is considered synonymous with *A. armatum* McCallum, 1895. The genus *Bunoderina* Miller, 1936 is reduced to synonymy with *Bunodera* Railliet, 1896. N.G.S.

261—Canadian Medical Association Journal.

- a. MILLER, M. J. & CHOQUETTE, L., 1940.—“Studies on pinworm infection in Canada. I. The incidence of pinworm infection in French-Canadian school children.” 43, 453-455.
- b. MILLER, M. J., CHOQUETTE, L., AUDET, W., KELSO, R. F. & GUENETTE, J. A., 1940.—“Studies on pinworm infection. II. Tests with gentian violet in the treatment of pinworm infection.” 43, 455-458.

(261a) Miller & Choquette examined 198 school children from 6 to 16 years of age in a Quebec village and found one NIH swab per child to reveal an incidence of 33%. Children of 9 and 10 years showed the highest infection rate. M.R.Y.

(261b) The authors have found gentian violet in tablet form efficient against pinworm infection in approximately 90% of 29 school children. Over a period of 10 days children from 6 to 9 years of age were given one $\frac{3}{20}$ th grain tablet 3 times a day and those 10 to 13 years of age were given one $\frac{1}{2}$ grain tablet 3 times a day. The tablets were specially covered with a water-soluble coating which was supposed to dissolve 4 hours after they were swallowed. Occasional vomiting was caused but a temporary interruption of the treatment was sufficient to allow the symptom to disappear. M.R.Y.

262—Ceylon Journal of Science. Section B. Zoology and Geology. (Spolia Zeylanica).

- a. BURT, D. R. R., 1940.—“New species of cestodes from Charadriiformes, Ardeiformes, and Pelecaniformes in Ceylon.” 22 (1), 1-63.
- b. BURT, D. R. R., 1940.—“New avian cestodes of the family Davaineidae from Ceylon.” 22 (1), 65-77.

(262a) Burt describes 16 cestodes which he has recovered from a number of birds in Ceylon. *Paricterotaenia coronata* is redescribed but the others are new. *Amoebotaenia setosa* n. sp. from *Lobipluvia malabarica* has up to 34 segments, 16 hooks measuring from 61 to 67 μ and an armed ductus musculinus. *Paradilepis brevis* n. sp. from *Phalacrocorax fuscicollis* has small suckers and cirrus sac while the length of the short hooks on the rostellum are distinct specifically. *Paricterotaenia tringae* n. sp. from *Tringa* spp. has about 100 segments but as it shows several differences from the species of this genus it may be necessary to re-name the genus. *Parvitaenia ardeolae* n. g., n. sp. from *Ardeola grayi* is a small worm with a double row of hooks. Pores irregularly alternate with few testes in a posterior position. Uterus

sac-shaped. He adds 6 new species to the genus *Choanotaenia*: *C. burhini* n. sp. and *C. magnihamata* n. sp. were recovered from *Burhinus oedicnemus indicus*; *C. lobiplusiae* n. sp. from *Lobiplusia malabarica*; *C. stagnatilis* n. sp. from *Tringa stagnatilis*; *C. glareolae* n. sp. from *Tringa glareola*; and *C. dispar* n. sp. from *Lobiplusia malabarica*. The new species are described and differentiated in a table. *Malika kalawewaensis* n. sp. and *M. zeylanica* n. sp. were recovered from *Burhinus oedicnemus indicus*, and *M. himantopodis* n. sp. from *Himantopus himantopus himantopus*. *Panuwa lobivanelli* n. g., n. sp. was obtained from *Lobivanellus indicus indicus* and is related to *Choanotaenia* but is distinguished by the relative positions of genital ducts and excretory ducts. *Hymenolepis childi* n. sp. was recovered from *Phalacrocorax niger* and has 10 small hooks measuring 21 to 22 μ long. The cirrus sac extends to the middle of the segment at least. P.A.C.

(262b) Burt describes 3 new cestodes of the family Davaineidae from birds in Ceylon. *Cotugnia magna* n. sp. from the domestic pigeon is a large worm with many large hooks and many testes. *Raillietina* (*Skrjabinia*) *caprimulgi* n. sp. was obtained from *Caprimulgus asiaticus* and is to be distinguished by the possession of 9 to 11 rows of minute hooks on the rostellum. There are 17 to 21 testes and a cirrus sac which extends just beyond one third of the segment width. *Cotugnia polytelidis* n. sp. was recovered from specimens of *Polytelis melanura* which had been imported to the local zoological gardens from Australia. Ceylon may not therefore be a natural geographical distribution for the species. This species may be distinguished by the possession of 100 to 110 testes, a pyriform receptaculum seminis, and a uterus anterior in position. P.A.C.

263—Chinese Medical Journal.

- a. SUNG, T. Y., 1940.—“History of gastro-intestinal diseases in China.” 58 (3), 324-337.
- b. HSÜ, H. F., 1940.—“Historical development, present status and future prospect of helminthology in China.” 58 (3), 363-369.

(263a) Sung gives some interesting details from ancient Chinese medical works which show, *inter alia*, that *Ascaris*, *Oxyuris* and other worms were known from early times. *Ascaris* is referred to in the “Book of Plain Questions” dating from the 2nd or 3rd century B.C. B.G.P.

264—Chinese Medical Journal. Supplement.

- a. HOEPPLI, R., 1940.—“Development of *Cysticercus fasciolaris* under abnormal conditions.” No. 3, 224-227.
- b. HSÜ, H. F. & HOEPPLI, R., 1940.—“Histological changes caused by *Metorchis orientalis* in the bile duct system of experimentally infected ducks.” No. 3, 228-234.
- c. HOEPPLI, R., 1940.—“Tissue reactions in normal rats and rats infested with *Cysticercus fasciolaris* against injected cysticercus material.” No. 3, 235-240.
- d. HSÜ, H. F. & LI, S. Y., 1940.—“Studies on certain problems of *Clonorchis sinensis*. VIII. Experimental proof of *Bithynia longicornis* as the first intermediate host of *C. sinensis*.” No. 3, 241-243.

- e. HSÜ, H. F. & LI, S. Y., 1940.—“Studies on certain problems of *Clonorchis sinensis*. IX. The migration route of its early larval stages in the snail, *Bithynia fuchsiana*.” No. 3, 244-254.
- f. CHU, H. J., 1940.—“Studies on *Clonorchis sinensis* in vitro. Part III. Survival period in relation to certain dyes.” No. 3, 255-259.
- g. CHU, H. J. & HSÜ, C. L., 1940.—“Studies on *Clonorchis sinensis* in vitro. Part IV. Combined effect of gentian violet and X-rays.” No. 3, 260-266.
- h. TANG, C. C., 1940.—“A comparative study of two types of *Paragonimus* occurring in Fukien, South China.” No. 3, 267-291.
- i. CHOW, C. Y., 1940.—“Note on a new nematode, *Oswaldocruzia peipingensis* n. sp. from toad.” No. 3, 292-294.
- j. LI, S. Y., 1940.—“On *Filaria clava* Wedl, 1856, parasite of the subcutaneous tissue of pigeon.” No. 3, 295-299.

(264a) Hoepli has examined the viability of *Cysticercus fasciolaris* when transferred surgically to the abdominal cavity of rats. The results are interesting because 4 such larvae transferred to a rat already infected with a parasite were found two months later still alive though somewhat retarded in development. These larvae were fed to a cat and one sexually mature tapeworm resulted. Larvae which were introduced into a clean rat died as did also larvae which had had all but the head portion removed. While unable to draw any conclusions from these few experiments, Hoepli thinks they are interesting as pointing out the complexity of the nature of helminth immunity. P.A.C.

(264b) The histological changes observed in ducks experimentally infected with *Metorchis orientalis* were fundamentally similar to those induced by *Fasciola hepatica*, *Clonorchis sinensis* and *Opisthorchis felinus* in their normal hosts. R.T.L.

(264c) Hoepli has investigated the effect on the tissues of rats of injections of emulsion of *Cysticercus fasciolaris* and *Sparganum erinacei*, and with powdered mica. Some of the rats used for injection had already been infected with heavy doses of *Taenia taeniaeformis* eggs: the others were clean. Some of the rats had only 2 or 3 larvae in the liver, indicating a considerable degree of immunity. However, in both the groups of rats the histological reactions were the same and consisted of a central necrotic area surrounded by an intense inflammatory area after 3 days. After 14 days the reaction was very similar except that there were more fibroblasts. Powdered mica caused severe necrosis while the *Sparganum* emulsion produced none, but only a diffuse infiltration of leucocytes. Fragments of cyst wall introduced subcutaneously caused the onset of cell growth. P.A.C.

(264d) *Bithynia longicornis*, which has been shown experimentally to be an efficient intermediate host for *Clonorchis sinensis*, is very abundant in the fish ponds of Canton, and probably plays an important role in the spread of clonorchiasis in that area. R.T.L.

(264e) The miracidia of *Clonorchis sinensis* hatch in the rectum or intestine of *Bithynia fuchsiana* and become sporocysts in the gut wall. Their further development occurs in the surrounding lymph space or in the gills. The mature sporocysts produce rediae which usually migrate into the lymph space of the liver. R.T.L.

(264f) The average life of *Clonorchis sinensis* in diluted horse serum is approximately 6 to 8 days, with a maximum of 3 weeks. The addition of prontosil 1 in 8,000 extended this period to 65 days. The addition of methyl green, trypan blue and acid fuchsin, without a change of medium, prolonged the survival period—in the case of methyl green (1 in 5,000) to 135 days.

R.T.L.

(264g) A combination of gentian violet in very low concentrations combined with a comparatively low X-ray dosage proved more effective in the destruction of *Clonorchis in vitro* than either agent alone.

R.T.L.

(264h) In the Fukien Province of South China there are two types of Paragonimus. For one called the "ringeri" type *Melania toucheana* is the first and *Potamon (P.) denticulatus* is the second intermediate host. For the second or "rodent" type the first intermediary is *Katayama tangi* while the crab, *Parathelphusa (P.) sinensis*, is the second.

R.T.L.

(264i) Chow describes *Oswaldocruzia peipingensis* n. sp. from a toad, *Bufo bufo gargarizans*, in Peiping. While related to *O. molgeta* and *O. socialis* it can be recognized by the length of the female tail, the structure of the spicules, and the branching of the dorsal ray. The cuticular inflation is striated and the cervical papillae are situated anterior to the posterior end of the oesophagus.

P.A.C.

(264j) Additional evidence of the close similarity between *Filaria clava* and the type species of *Pelecitus*, *P. helicinus*, is presented. The material examined by Li was obtained from 6 out of 10 pigeons collected in Peiping.

R.T.L.

265—Circular. Hawaii Agricultural Experiment Station.

- a. ALICATA, J. E., SWANSON, L. E. & GOO, G. W. H., 1940.—"Methods of controlling the liver fluke of cattle in Hawaii." No. 15, 23 pp.

(265a) Reporting on the control of *Fasciola gigantica* infestation in cattle in the Hawaiian islands, Alicata, Swanson & Goo recommend CuSO_4 against the carrier (*Fossaria ollula*), and Distol or kamala as an anthelmintic. For swamps they use 20 lb. CuSO_4 per acre, mixed with 4 times its weight of sand. In streams, a concentration of 1 in 250,000 should be aimed at: a 24-hour treatment at this strength can be achieved by using 24 lb. CuSO_4 per square foot of cross section per unit velocity in feet per second, and is effective for about 1 mile. The dosage of Distol given is 1 capsule per 70 lb., and of kamala 1 capsule (10 g.) per 60 lb., in each case the dose being spread over 3 or 4 days. Kamala appears to be the more toxic. An appendix gives a table of weights of beef cattle in terms of heart-girth measurements, and details of treatment.

B.G.P.

266—Comptes Rendus (Doklady) de l'Académie des Sciences de l'URSS.

- a. WEIZMANN, W. R., 1940.—"Die Verschiedenartigkeit der geschlechtlichen Vermehrung bei Bandwürmern." 26 (2), 191-193.
b. WEIZMANN, W. R., 1940.—"Die Entstehung germinativer Elemente beim Katzenbandwurm *Taenia crassicolis*." 26 (2), 194-196.

(266a) Weizmann considers that different types of sexual reproduction are to be found amongst the cestodes ; in particular, the so-called vitellaria of *Taenia solium* are not analogous with those of trematodes or bothriocephalids and probably do not have a yolk-producing function at all. B.G.P.

267—Cornell Veterinarian.

- a. SALISBURY, G. W., BAKER, D. W. & BRITTON, J. W., 1940.—“ Control of equine strongylosis ; Part II : The effect of anthelmintic treatment of mares on the development of strongylosis in foals.” 30 (3), 367-375.
- b. SINGER, A. J. & BAKER, D. W., 1940.—“ Phenothiazine as an anthelmintic for intestinal nematode parasitisms in sheep.” 30 (3), 375-382.
- c. HOBBS, W. R., 1940.—“ Canine filariasis.” 30 (3), 383-391.
- d. BAKER, D. W. & WILLMAN, J. P., 1940.—“ Control of worm parasites in market lambs.” 30 (3), 401-404.
- e. MAYHEW, R. L., 1940.—“ Studies on bovine gastro-intestinal parasites : IV. Influence of hay consumption on egg counts.” 30 (4), 495-498.
- f. HOWELL, C. E. & BRITTON, J. W., 1940.—“ A field trial with phenothiazine as an equine anthelmintic.” 30 (4), 526-532.

(267a) A reduction by anthelmintic treatment of the faecal strongyle egg-output of mares by 39% resulted in the mares' foals producing an egg-count 39% less than those of foals kept under natural conditions the previous year. The pasture condition was excessively dry, but it is concluded that the treatment of the mares caused a directly proportionate reduction in the pick up of strongyles by the foals. The earliest occurrence of the eggs of the various intestinal helminths was noted and the greater resistance to infection of Belgian as compared with Percheron foals is discussed. J.W.G.L.

(267b) Singer & Baker report a preliminary experiment in which 7 ewes were given 10 g. phenothiazine in suspension with 0.5 g. gum acacia, with a resulting reduction in the helminthic egg-count of 80 to 100%. In a further experiment with 24 sheep, phenothiazine given in a single drench, and in 3 drenches at 6-day intervals, was compared with copper/nicotine sulphates and also with tetrachlorethylene. Worm-counts were made on 12 of the animals, all were weighed weekly, and eggs were counted thrice weekly. The latter showed reductions in the 2 phenothiazine groups of 75% and 50%, 30% in the copper nicotine sulphates group, and 60% in the tetrachlorethylene group. Worm-counts indicate that phenothiazine is most effective against *Oesophagostomum*, *Ostertagia*, and *Cooperia*. B.G.P.

(267c) Hobbs gives a popular description of *Dirofilaria immitis* in dogs with particular reference to the clinical aspect of the disease in the United States. The history, symptoms and diagnosis of the disease are discussed together with its treatment and the toxic symptoms which may be caused by over-dosing with antimony preparations. J.W.G.L.

(267d) Baker & Willman have endeavoured to compare the control of worm parasites in sheep (i) by copper sulphate and nicotine sulphate drench and (ii) by tetrachlorethylene. On the average the 14 sheep in the second group were marketed 20 days before those of the first group. Worm counts suggested to the authors that tetrachlorethylene was more effective against abomasal and small intestinal worms while copper and nicotine sulphates provided better control of the large intestinal helminths. J.W.G.L.

(267e) Mayhew presents data illustrating that in calves a reduction in the consumption of hay causes an increase in faecal egg-counts; this usually occurs 1 to 3 days after the reduction. It is pointed out that this shows the necessity for a knowledge of the history of the case before diagnosis of the degree of parasitism can be undertaken on the basis of egg-counts. J.W.G.L.

(267f) As a result of dosing 45 horses with 45 to 80 g. of phenothiazine (mixed with the grain ration), and making egg-counts before and after treatment, Howell & Britton claim that this drug was 100% effective against strongyles in 37 horses and 78 to 95% in the other 8. It was ineffective against *Ascaris*. No toxic symptoms were observed. B.G.P.

268—Deutsche Tierärztliche Wochenschrift.

- a. SCHMID, F. & LANGER, H., 1940.—“Die Wirkung von Wurmmitteln auf die verschiedenen Strongylienarten des Pferdes. I. Allegan.” 48 (46), 553-555.

(268a) Schmid & Langer illustrate the efficiency of Allegan as an anthelmintic by experiments on horses. The effect on individual species of *Strongylus* spp. and *Trichonema* spp. is demonstrated by means of faecal egg-counts coupled with differential counts of larvae raised in cultures. Oral administration was very effective for *Trichonema* spp., whereas intravenous administration affected primarily the large strongyles (*S. vulgaris*, *S. equinus* and *S. edentatus*). Graphs are included to illustrate the effects of treatment. J.W.G.L.

269—Día Médico.

- *a. PRINI, I., 1940.—“Quiste hidático del hígado.” 12, 513-517.

270—East African Agricultural Journal.

- a. NATTRASS, R. M., 1940.—“Notes on plant diseases. Nematode disease of oyster nut.” 6 (2), p. 73.

(270a) Nattrass reports that in Kenya young plants of the oyster nut [*Telfairia pedata*] are very susceptible to infection by the root-knot nematode, *Heterodera marioni*. A characteristic feature of the attack is the formation of a single large gall on the main root just below soil level. He recommends the avoidance of infective soil, or the use of sterile soil in pots for the raising of healthy seedlings. T.G.

271—Écho Médical du Nord.

- a. COUTELEN, F. & RÉANT, M. L., 1940.—“Recherches systématiques sur le parasitisme intestinal dans la région du Nord. Résultats complémentaires chez des enfants de 2 à 6 ans.” 11 (2), 38-43.

(271a) Coutelen & Réant examined 515 stools from 179 children between the ages of 2 and 6 years in the northern region of France. *Trichuris trichiura* was found in 33%, *Enterobius vermicularis* in 30% and *Ascaris lumbricoides* in 12%. Figures for protozoa are also given. [For the first part of this paper see Helm. Abs., Vol. VII, No. 544a.] M.R.Y.

* Original not available for checking or abstracting.

272—Empire Journal of Experimental Agriculture.

- a. ROBERTSON, D. & FRASER, A. H. H., 1940.—“The influence of a moderate worm-burden on the growth and health of lambs.” 8 (32), 323-325.

(272a) Robertson & Fraser found that even a moderate experimental infection of intestinal worms in lambs significantly influenced the live-weight increase, the dead-weight of carcasses and the haemoglobin percentage of blood. Scouring was also much in evidence in the experimental animals as compared with a control group which had been kept worm-free throughout the experiment.

D.O.M.

273—Farming in South Africa.

- a. MÖNNIG, H. O., 1940.—“Worms in sheep. Different types and their control.” 15 (173), 315-322.

(273a) Mönnig gives a useful summary, with slightly magnified “naked-eye” illustrations, of the different types of helminths of economic importance to the sheep industry of South Africa accompanied by brief accounts of symptoms and remedial and control measures.

R.T.L.

274—Gazette des Hôpitaux Civils et Militaires.

- a. BABONNEIX, L., 1940.—“Le *Chenopodium anthelminthicum*: son emploi chez l'enfant.” 113 (43/44), 445-446.

275—Gazzetta degli Ospedali e delle Cliniche.

- a. BRIGHENTI, D., 1940.—“La ascaridiosi. Rivista sintetica.” 61 (18), 371-375.

276—Haematologica.

- *a. BELLOMO, A. & BOLOGNA, R., 1940.—“Ricerche ematologiche e coprologiche sull'elmintiasi.” 22, 309-323.

277—Indian Journal of Medical Research.

- a. MAPLESTONE, P. A. & BHADURI, N. V., 1940.—“The helminth parasites of dogs in Calcutta and their bearing on human parasitology.” 28 (2), 595-604.
 b. NAPIER, L. E., DAS GUPTA, C. R. & RAO, S. S., 1940.—“Sternal puncture in filariasis.” 28 (2), 605-608.
 c. RAO, S. S., 1940.—“Study of filarial infection in Ratanpur (Central Provinces).” 28 (2), 609-613.
 d. MENON, T. B. & RAMAMURTI, B., 1940.—“Preservation *in vitro* of *Microfilaria bancrofti* and a study of the mechanism of ex-sheathing.” 28 (2), 615-620.

(277a) Maplestone & Bhaduri describe the helminth fauna of dogs in Calcutta. It consists of 21 species and 10 of them are recorded for the first time for India. *Trichostrongylus colubrifomis*, *Paramphistomum* sp., a genus of the family Troglorematidae, as yet not named, and *Paryphostomum*

* Original not available for checking or abstracting.

sufrartylfex are recorded as dog parasites for the first time. A number of species found in this survey may also parasitize man, notably *Heterophyes heterophyes* and *Opisthorchis felineus*, and are important therefore from the medical point of view. Still more important, however, is the presence of *Echinococcus granulosus* in dogs. P.A.C.

(277b) Microfilariae were found in 3 out of 46 filaria cases during the day and 10 out of 10 cases during the night by sternal puncture, and in all cases more microfilariae were found in the peripheral blood. This indicates that microfilariae do not shelter in the bone marrow during the day nor are they destroyed in the marrow. Cytological analysis showed that there was no change in the bone marrow as a result of the disease. J.W.G.L.

(277c) In the Bilaspur (C.P.) district of India, Rao found that *Wuchereria malayi* was the only filarial species present. Of 2,000 persons examined, 78 had elephantiasis of the extremities and the microfilaria rate was 16% among 191 examined. *Mansonioides* spp. were found breeding on pistia in all the big tanks, and *M. annulifera* and *M. uniformis* were found naturally infested. B.G.P.

(277d) Menon & Ramamurti have kept *Microfilaria bancrofti* alive in various media at different temperatures, but the longest survival time, 40 to 50 days, resulted from using 0.85% saline at 10° C. No morphological changes occurred in any case. Exsheathing was not effected by changing the pH with phosphate buffers (pH 4.1 to 10), by peptic digestion, or by cooling; however, microfilariae were observed to enter fibrin-masses, the posterior end of the sheath adhered to the mass, and the microfilaria wriggled out, the whole process taking some hours. B.G.P.

278—Indian Journal of Veterinary Science and Animal Husbandry.

- a. CRAWFORD, M., 1940.—“Infection of adult fowls with *Syngamus trachealis*.” 10 (3), 293-294.

(278a) Crawford finds adult fowls in Ceylon often infected with *Syngamus trachea* and considers that the bird is an important factor in maintaining and spreading infection. P.A.C.

279—Japanese Journal of Experimental Medicine.

- a. KAMIKO, K., 1940.—“Über die Entwicklung des *Ankylostoma caninum* innerhalb des Kaninchens bei oraler Infektion und über die Bedeutung des Blutes des eigentlichen Wirtes. Einige Bemerkungen über die biologische Bedeutung der Wirtskörperwanderung der Larven.” 18 (2), 59-76.

(279a) Kamiko reports on a number of experiments which show that ensheathed *Ancylostoma caninum* larvae are incapable of further development when fed to rabbits, unless they are first dipped in dog's blood or unless dog's blood is first injected intravenously into the rabbits. The results support the view of Miyagawa (*contra* Looss) that the blood route is necessary even for larvae which enter the host *per os*. B.G.P.

280—Japanese Journal of Veterinary Science.

- a. YOSIKAWA, M., MIYATA, I. & UESUGI, S., 1940.—“Supplement to information about Trematoda parasitic on dogs in Kobe.” 2 (4), 450-464. [In Japanese : English summary p. 464.]
- b. KATO, S., 1940.—“On a nematode, *Uncinaria stenocephala* (Railliet, 1884), from dogs in Chosen.” 2 (6), 617-627. [In Japanese : English summary p. 627.]

(280a) In a further report on the trematode parasites of dogs in Kobe, Yosikawa, Miyata & Uesugi add the following 7 species and varieties : *Echinochasmus japonicus*, *Heterophyes heterophyes nocens*, *H. continuus*, *Metagonimus yokogawai ovatus*, *M. katsuradai*, *Monorchotrema yokogawai* and *Pygidiopsis summus*. P.A.C.

(280b) Kato records the presence of *Uncinaria stenocephala* in dogs in Korea. It occurred in 1.4% of the dogs examined, usually in the middle of the jejunum. It was generally found in association with *A. caninum* but in larger numbers than this parasite : it seemed to have no pathological effect on the host. P.A.C.

281—Japanese Journal of Zoology.

- a. YAMAGUTI, S., 1940.—“Studies on the helminth fauna of Japan. Part 31. Trematodes of fishes, VII.” 9 (1), 35-108.

(281a) Yamaguti describes 57 trematodes of which 31 represent new species. New names are :—DACTYLOGYRIDAE : *Dactylogyrus apogonis* n. sp., *Haliotrema mogurndae* n. sp., *H. xesuri* n. sp.; CALCEOSTOMATIDAE : *Calceostoma sciaenae* n. sp.; CAPSALIDAE : *Trochopus goniistii* n. sp.; MICROCYTLIDAE : *Microcotyle ditrematis* n. sp., *M. tanago* n. sp., *M. seriolae* n. sp., *M. acanthogobii* n. sp., *Axine (Axine) cypseluri* n. sp.; BUCEPHALIDAE : *Bucephalopsis sibi* n. sp.; ALLOCREADIIDAE : *Plagioporus ira* n. sp., *Opechona xesuri* n. sp., *O. girellae* n. sp., *Allolepidapedon fistulariae* n. g., n. sp., *Opecoelus mutu* n. sp., *Opegaster plotosi* n. sp., *Pseudopecoeloides tenuis* n. g., n. sp., *P. carangis* n. comb. for *Cymbephallus carangi* Yamaguti 1938, *Coitocaecum xesuri* n. sp., *C. leptoscari* n. sp., *Opechonoides gure* n. g., n. sp.; ACANTHOCOLPIDAE : *Echinostephanus fistulariae* n. sp.; ZOOGONIDAE : *Deretrema plotosi* n. sp., *D. hoplognathi* n. sp.; FELLODISTOMIDAE : *Pseudo-steringophorus hoplognathi* n. g., n. sp.; HEMIURIDAE : *Sterrhurus gymnothoracis* n. sp., *Musculovesicula gymnothoracis* n. g., n. sp., *Trifoliovarium acanthocepolae* n. g., n. sp., *Lampritrema nipponicum* n. g., n. sp. (placed in *Lampritrematinae* n. subf.); DIDYMOZOIDAE : *Nematobothrium lampridis* n. sp., *Gonapodasmius cypseluri* n. sp. N.G.S.

282—Journal of the American Medical Association.

- a. MAYER, V., 1940.—“Acute appendicitis and pinworm infestation occurring concomitantly in the same family.” 115 (12), 1009-1010.

283—Journal of the American Veterinary Medical Association.

- a. WHITLOCK, J. H. & COX, R., 1940.—“A note on phenothiazine therapy in sheep.” 97 (764), 436-437.

(283a) Whitlock & Cox briefly describe an experiment in which phenothiazine-acacia solution was given to 4 sheep, copper and nicotine sulphates to 2, and there were 3 controls. From egg-counts they conclude that infestation with nematodes laying thin-shelled eggs was reduced to a harmless level. An interesting feature of the administration of the drugs was the use of Mönnig's technique: 2.5 c.c. of 10% CuSO₄ solution sprayed on to the back of the mouth immediately before drenching to close the oesophageal groove. The low efficacy of phenothiazine in heavily infested ruminants may be due to immobilization of the drug in the rumen. B.G.P.

284—Journal of the Ceylon Branch of the British Medical Association.

- a. GUNWARDENE, S. R., 1940.—“Decomposition of tetrachlorethylene.” 37 (1), 47-48.

(284a) Gunewardene quotes the Government Analyst to the effect that tetrachlorethylene deteriorates unless stored in the dark [time and temperature are not mentioned]. Phosgene can readily be detected from its pungent, irritant, musty-hay odour. B.G.P.

285—Journal of the Chosen Medical Association.

- a. TYU, B. J., 1940.—“The etiological investigation of endemic elephantiasis in Southern Korea.” 30 (7/8), 1136-1159. [In Japanese: English summary pp. 53-54.]

(285a) Tyu finds that *Streptococcus haemolyticus*, isolated from the feet of patients suffering from acute erysipeloid attacks, and injected intracutaneously into normal subjects, causes only slight local erythema and swelling. When injected living or killed into carriers of *Wuchereria bancrofti*, or into elephantiasis cases, or after mixing with *Dirofilaria immitis* extract, the reaction is very severe and resembles an erysipeloid attack. In southern Korea these acute attacks are forerunners of true elephantiasis. B.G.P.

286—Journal of the Council for Scientific and Industrial Research. Australia.

- a. LIPSON, M. & GORDON, H. McL., 1940.—“The passage of phenothiazine through the alimentary canal of the sheep.” 13 (4), 240-244.
b. GORDON, H. McL., 1940.—“The anthelmintic efficiency of phenothiazine against immature *Haemonchus contortus*.” 13 (4), 245-246.

(286a) Phenothiazine is usually detectable in the faeces of sheep 12 hours after administration. Reaching its maximum concentration after 24 hours it is usually completely eliminated at the end of the fourth day. The average amount passed in the faeces was 32% of the dose. R.T.L.

(286b) Against immature *Haemonchus contortus* of 10 to 15 days old, phenothiazine in doses of 0.6 g. per kg. body weight is highly efficient. This is of practical significance, for it is unnecessary to repeat the treatment at short intervals. R.T.L.

287—Journal of the Elisha Mitchell Scientific Society.

- a. DETURK, W. E., 1940.—“The occurrence and development of a hyper-parasite, *Urosporidium crescens* sp. nov. (Sporozoa, Haplosporidia), which infests the metacercariae of *Spelotrema nicolli*, parasitic in *Callinectes sapidus*.” [Abstract of paper presented at the 39th Annual Meeting of the North Carolina Academy of Science, Davidson, N.C., May 1940.] 56 (2), 231-232.

288—Journal of Genetics.

- a. GREGORY, P. W., MILLER, R. F. & STEWART, M. A., 1940.—“An analysis of environmental and genetic factors influencing stomach-worm infestation in sheep.” 39 (3), 391-400.

(288a) On the basis of trichostrongyle egg-counts from the progeny of two rams, extending over two months, Gregory et al. conclude that genetic constitution for resistance and susceptibility is a more important factor, influencing stomach-worm infestation in sheep, than either season of year or age of sheep. This conclusion, for which statistical evidence is presented, suggests that genetic selection should readily modify resistance. B.G.F.

289—Journal of Helminthology.

- a. FRANKLIN, M. T., 1940.—“On the identification of strains of *Heterodera schachtii*.” 18 (2/3), 63-84.
 b. FRANKLIN, M. T., 1940.—“The effect on seed potatoes of formalin treatment for the destruction of adherent eelworm cysts.” 18 (2/3), 85-88.
 c. CLAPHAM, P. A., 1940.—“On the helminths of corvid birds in the British Isles.” 18 (2/3), 89-94.
 d. CLAPHAM, P. A., 1940.—“Further studies on *Coenurus glomeratus*.” 18 (2/3), 95-102.
 e. ROGERS, W. P., 1940.—“The occurrence of zinc and other metals in the intestines of *Strongylus* spp.” 18 (2/3), 103-116.
 f. PETERS, B. G. & LEIPER, J. W. G., 1940.—“Variation in dilution-counts of helminth eggs.” 18 (2/3), 117-142.
 g. ROGERS, W. P., 1940.—“Digestion in parasitic nematodes. I. The digestion of carbohydrates.” 18 (2/3), 143-154.

(289a) Three methods of identifying *Heterodera* cysts of unknown strain are tried. (i) Possible host plants are subjected to infection experiments. This is the final test of eelworm strain, but is slow. (ii) Root excretions of possible host plants are used to find out if they stimulate larvae to hatch from the cysts. Potato strain larvae react to root excretions of several solanaceous plants, but other strains of eelworm are difficult to stimulate. (iii) Larvae extracted mechanically from cysts of several strains are measured. Significant differences are found between the lengths of larvae of several strains, the larvae of the oat strain in particular being considerably longer than those of any other strain measured. This method might serve for the identification of cysts of the oat strain if a sufficient number of larvae were measured and if the size of this strain is found to be constant in other localities. Kemner's subspecies *H. schachtii* subsp. *rostochiensis* is considered valid for the potato strain of *H. schachtii* on the grounds of the morphology of the cyst, the characteristic response of the larvae to solanaceous root excretions, and the restricted host range. M.T.F.

(289b) Majestic seed potatoes steeped in 5% formalin for 6 hours in February subsequently produced a crop having a total yield and yield of ware not significantly different from that of the controls. There was an increase in the weight of chats and a decrease in the percentage of ware from the treated as compared with the control seed. 5% of the tubers failed to grow after the treatment. The formalin treatment was repeated in December using an early potato (Arran Pilot), a second early (Ally) and a maincrop (Arran Banner). Some deterioration of the tubers resulted in the two early varieties, and 6% and 9% respectively failed to sprout. The Arran Banner tubers appeared to be unharmed. A few eelworm cysts were found in the soil adhering to the seed tubers. M.T.F.

(289c) Clapham has found that *Syngamus trachea* is a common parasite of certain corvid birds in the British Isles. This may contrast with conditions in America where *S. gracilis* seems to be the species concerned. Nestlings showed frequent and varied infections in this group of birds. She puts forward evidence to show that helminth eggs, parasites of domestic birds, may pass through the guts of wild birds, and still remain viable and infective to their natural hosts. P.A.C.

(289d) In a further study of *Coenurus glomeratus*, Clapham describes the histological details of the process of budding and suggests that budding and daughter cyst formation may be an attempt to stave off old age and sterility. New growths can be induced sometimes by implantation of coenurus material to suitable hosts. P.A.C.

(289e) Rogers reports that zinc (reaching a maximum of 0.58 mg. per worm or 0.77% of the total worm weight), copper, silver and iron are present in the intestines of *Strongylus edentatus* and *S. vulgaris*. Sulphur was found in amounts which indicated that the zinc was probably present as the sulphide. Zinc (in maximum concentration of 9.05 mg. per 100.2 g. of mucosa) and copper were found to be present in the mucosa of the horse taken from regions where the parasites were usually situated. Calculation showed that *S. edentatus* must ingest from 3.9 to 21.2 g. of horse mucosa (or 53 to 282 times the average worm weight) to obtain the amounts of zinc found. In the case of *S. vulgaris*, 0.7 to 3.4 g. of mucosa (or 62 to 284 times the average worm weight) were necessary. The possible function of the zinc in the worms and its situation in relation to the sphaerocrystals in the parasites' intestinal walls is discussed. W.P.R.

(289f) Peters & Leiper show that a modified Stoll egg-counting technique, applied to sheep strongyles, yields counts approximating closely to the theoretical Poisson distribution, and not far from Normal in form. They show that there is a significant daily variation in counts from the same sheep and from two sheep together, and also occasionally in counts from different portions of the same faecal motion. A modified McMaster technique, compared with the former, is shown to give higher counts with less variability; in addition it is more rapid and convenient. B.G.P.

(289g) Rogers has extracted amylolytic enzymes from the intestines of *Ascaris lumbricoides* (pig strain) and *Strongylus edentatus*. Of the salts examined, sodium bicarbonate was found to accelerate the amylolytic action

of the enzyme from the former parasite to the greatest extent. *S. edentatus* amylase was most rapid in the presence of potassium iodide. Amyloclastic and saccharogenic activity of *S. edentatus* was greatest at pH 8. It appeared that the optimum pH for the action of *A. lumbricoides* amylase was somewhat higher. Dextrose was produced by the action of *S. edentatus* amylase on a starch substrate. Invertase action was found to be slight or lacking in both parasites. It is concluded that the amylolytic enzyme of *A. lumbricoides* is distinct from that of *S. edentatus* and that of its host also. The effects of the ingestion of hosts' tissues and juices on the efficiency of carbohydrate digestion in the parasites are discussed.

W.P.R.

290—Journal of Infectious Diseases.

- a. OLIVER-GONZÁLEZ, J., 1940.—“The *in vitro* action of immune serum on the larvae and adults of *Trichinella spiralis*.” 67 (3), 292-300.

(290a) Oliver-González has investigated the effect *in vitro* on larvae and adults of *Trichinella spiralis* of immune serum obtained by feeding a single dose of larvae to the host animal, and hyper-immune serum obtained by feeding increasing doses of larvae over a period of 3 weeks until the host animal could resist a dose of larvae that would normally be fatal. Controls were treated with normal serum, inactivated serum, and with serum from rats harbouring *Cysticercus crassicolis*. The use of immune and hyper-immune sera was followed by the appearance of precipitates, in the case of larvae, round the mouth, followed by immobilization and death; and in adults where it seems to prevent the expulsion of eggs, round the mouth, anus and vulva. Hyper-immune serum was earlier and more markedly effective than immune, while inactivated serum was as effective as active or complemented sera. Sera from rabbits immunized with saline suspensions of powdered larvae had no effect on adults but killed more than half of the larvae. P.A.C.

291—Journal of the International College of Surgeons.

- a. GENNARO, J. F., 1940.—“Echinococcus cyst of the liver simulating a stone in the common bile duct.” 3 (4), 342-350.

292—Journal of the Marine Biological Association of the United Kingdom.

- a. COLMAN, J., 1940.—“On the faunas inhabiting intertidal seaweeds.” 24 (1), 129-183.

(292a) As a result of a study of the fauna inhabiting intertidal seaweeds occurring in Wembury Bay, Plymouth, Colman lists a number of free-living marine nematodes (identified by Baylis) which have not previously been reported in the Plymouth Marine Fauna, 2nd edition, 1931.

T.G.

293—Journal of the Missouri State Medical Association.

- a. CARLISLE, J. B. & CARREL, R. M., 1940.—“Oxyuriasis and appendicitis: an unusual case.” 37 (9), 386-387.

294—Journal of Obstetrics and Gynaecology of the British Empire

- a. EVANS, B., 1940.—“Hydatid (echinococca) cysts of the female pelvis.” 47 (2), 191-198.

295—Journal of Parasitology.

- a. JONES, M. F., JACOBS, L. & HOLLAENDER, A., 1940.—“The effects of monochromatic ultraviolet radiation on eggs of the nematode, *Enterobius vermicularis*. II. Sublethal effects.” 26 (6), 435-445.
- b. OLIVIER, L., 1940.—“Life history studies on two strigeid trematodes of the Douglas Lake region, Michigan.” 26 (6), 447-477.
- c. GLASER, R. W., MCCOY, E. E. & GIRTH, H. B., 1940.—“The biology and economic importance of a nematode parasitic in insects.” 26 (6), 479-495.
- d. WHARTON, G. W., 1940.—“The genera *Telorchis*, *Protenes*, and *Auridistomum* (Trematoda: Reniferidae).” 26 (6), 497-518.
- e. AMERICAN SOCIETY OF PARASITOLOGISTS, 1940.—“Program and abstracts of the sixteenth Annual Meeting of the American Society of Parasitologists, Philadelphia, Pennsylvania, December 30 and 31, 1940, and January 1, 1941.” 26 (6), Supplement, 48 pp.

(295a) The authors have found that the rate of hatch is slower for eggs irradiated with monochromatic ultraviolet radiation (usually of 2650Å) than for controls, and that storage after irradiation revealed a delayed lethal effect. Survival of hatched irradiated and non-irradiated larvae showed the shorter time for the irradiated larvae. Immature eggs were more damaged by ultraviolet irradiation than eggs at the infective stage. M.R.Y.

(295b) Olivier has made life-history studies on two strigeid parasites of the domestic pigeon, using material collected on Douglas Lake, Michigan. *Diplostomum micradenum* uses the tadpole of *Rana pipiens*. The cercariae may also penetrate tadpoles of *R. clamitans* and *Hyla versicolor* but very little development occurs. The first intermediate host is the snail *Stagnicola palustris elodes*. The domestic pigeon may act as definitive host but is probably not the normal one in the wild state: the true host is not yet identified. *Apharyngostrigea pipientis*, the adult of which is now described for the first time, may also use the domestic pigeon as definitive host. The first intermediate host is *Planorbula armigera*, cercariae from which penetrate tadpoles of *Rana pipiens* and there develop into metacercariae which had previously been known under the name of *Tetracotyle pipientis*. All the stages in the life-history of both these parasites are described. P.A.C.

(295c) Glaser, McCoy & Girth describe the life-history of the nematode, *Neoaplectana glaseri*, which first parasitizes and then lives saprophagously in the grubs of the Japanese beetle, *Popillia japonica*, and certain insects. Adult beetles are also attacked by the nematode and serve in its dispersal to new centres. The authors give detailed instructions for the cultivation of the nematode on artificial culture media and for the production of vast numbers of the ensheathed infective larval stage which have been used, in watery suspensions, for spreading on the surface of soil with a view to the utilization of the nematode in the biological control of its beetle hosts. T.G.

(295d) Wharton has made a taxonomic overhaul of a number of genera belonging to the family Reniferidae. He concludes that the genus *Telorchis* should incorporate the genera *Cercorchis* and *Paracercorchis*. These differ

from *Telorchis* in small points mainly concerned with the position of the genitalia and are not considered to be of generic value. *Protenes* is however distinct from *Telorchis* and contains a single species, *P. angustus*. Up to the present *Telorchis* was believed to contain 43 species but of these 13 are not valid. The genera *Pterygotomaschalos* and *Tetrapapillatrema* are considered to have been based on specimens of *Auridistomum chelydrae*. P.A.C.

(295e) Abstracts are given of the following helminthic titles: (i) J. E. Ackert & L. P. Frick "Duodenal mucus of fowls as a nematode growth inhibitor"; (ii) J. E. Ackert & S. A. Edgar "Intestinal goblet cells and age resistance to parasitism"; (iii) P. D. Harwood, R. T. Habermann & J. E. Guthrie "Studies of phenothiazine and related substances as anthelmintics"; (iv) J. H. Whitlock "The influence of biological variation and dosage-time-mortality relationships on anthelmintic testing"; (v) W. M. Reid "Some effects of short starvation periods upon the fowl cestode *Railletina cesticillus* (Molin)"; (vi) H. W. Brown, A. J. Sheldon & W. W. Taylor, jr. "The occurrence of *Diectophyme renale* in dogs in North Carolina"; (vii) N. R. Stoll "In vitro conditions favoring ecdysis at the end of the first parasitic stage of *Haemonchus contortus*"; (viii) R. L. Mayhew "Studies on bovine gastro-intestinal parasites: V. Immunity to the stomach-worm, *Haemonchus contortus*, with a note on the prepatent period"; (ix) E. T. Delaune & R. L. Mayhew "Studies on bovine gastro-intestinal parasites: VI. The blood picture in stomachworm (*Haemonchus contortus*) infections"; (x) J. S. Andrews "The internal parasites of Puerto Rican cattle with special reference to the species found in calves suffering from 'tropical diarrhea'"; (xi) P. L. Burlingame & A. C. Chandler "Host-parasite relations of *Moniliformis dubius* (Acanthocephala) in white rats, and the environmental nature of resistance to single and superimposed infections with this parasite"; (xii) D. W. Baker "Advanced cases of trichostrongylosis in calves controlled by the use of yeast, adjunct to the anthelmintic treatment" (abstract not received); (xiii) L. A. Spindler "Survival of eggs of the swine ascarid in cultivated soil"; (xiv) L. A. Spindler & K. C. Kates "Survival on soil of eggs of the swine thorn-headed worm, *Macracanthorhynchus hirudinaceus*"; (xv) H. W. Brown & A. J. Sheldon "Treatment of canine heartworm (*Dirofilaria immitis*) with Fuadin and sulfanilamide"; (xvi) J. Hobmaier "*Crenosoma mephitis* in dogs"; (xvii) W. B. Hopp "Studies on human intestinal parasite infections among patients of an Indiana State Hospital"; (xviii) W. H. Headlee & W. B. Hopp "Further studies on human intestinal parasite infections among residents of Indiana"; (xix) J. F. Mueller "The occurrence of Charcot-Leyden crystals in the lesions of sparganosis"; (xx) E. B. Cram "Studies on oxyuriasis. IX. The familial nature of pinworm infestation"; (xxi) J. A. Scott "Schistosomiasis in Venezuela"; (xxii) J. T. Culbertson "Elimination of *Hymenolepis fraterna* from mice by administration of atabrine"; (xxiii) D. de Rivas "Acute trichiniasis with special reference to diagnosis and a new treatment by the application of heat to the small intestine"; (xxiv) C. B. Hamann "The increase of histamine-like substance in the blood of rats experimentally infected with *Trichinella spiralis*"; (xxv) A. J. Levin "Culturing *Trichinella spiralis* in vitro. I. Preliminary experiments: a basic medium to sustain larvae unchanged for long periods in vitro"; (xxvi) A. J. Levin & T. C.

Evans "Effect of roentgen radiation on embryonic development of *Trichinella spiralis*"; (xxvii) E. Kotcher "The morphology and early development of the microfilaria of *Foleyella brachyoptera* Wehr and Causey, 1939"; (xxviii) W. W. Crawford "An unusual case of a sexually mature trematode from the body cavity of a diving beetle"; (xxix) E. E. Byrd "A note on the strigeid trematodes of the alligator, with remarks on the 'prostatic' gland"; (xxx) A. C. Cuckler "The life cycle of *Fibricola cratera* (Barker and Noll, 1915) Dubois, 1932 (Trematoda: Strigeata)"; (xxxi) A. V. Hunninen & R. M. Cable "Studies on the life history of a new species of *Anisoporus* (Trematoda: Allocreadiidae)"; (xxxii) H. W. Stunkard "Life history studies and specific determination in the trematode genus *Zoogonus*"; (xxxiii) J. H. Sandground " *Gastrodiscus hominis* as a parasite of rats in Java "; (xxxiv) J. F. Denton "A revision of the subfamily Dicrocoeliinae Looss, 1899, with new species from North American birds"; (xxxv) J. H. Fischthal & L. N. Allison " *Acolpenteron ureteroecetes* n. g., n. sp., a monogenetic trematode from the ureters of black basses "; (xxxvi) E. C. Herber "The mother sporocysts of three species of monostomes of the genus *Notocotylus* (Trematoda)"; (xxxvii) S. I. Feldman "Studies on the morphology and biology of a psilostome fluke"; (xxxviii) L. Olivier "Early stages in the development of strigeid trematodes"; (xxxix) A. C. Cuckler "Studies on the migration and development of *Alaria* spp. (Trematoda: Strigeata) in the definitive host"; (xl) C. G. Goodchild "The life history of *Phyllodistomum solidum* Rankin, 1937 (Trematoda: Gorgoderidae)"; (xli) R. M. Cable & A. V. Hunninen "Studies on the life history of *Dero-pristis inflata* (Molin) (Trematoda: Acanthocolpidae)"; (xlii) F. G. Wallace "Studies on two species of liver flukes"; (xliii) S. Brackett "Six new species of avian schistosomes from Wisconsin and Michigan with a description of the life cycle of one of them, *Gigantobilharzia gyrauli* (Brackett)"; (xliv) L. N. Allison "Life history of *Cercariaeum constantiae* Mueller (Trematoda: Brachylaemidae) from the snail, *Campeloma*"; (xlv) W. W. Crawford "The life history of a gorgoderid trematode, presumably of the genus *Phyllodistomum*"; (xlvi) M. S. Ferguson "Further studies on the sterile culture of stages in a trematode life cycle"; (xlvii) G. W. Hunter, III & K. M. Mackenthun "The life cycle of a pseudophyllidean tapeworm from the common sunfish, *Lepomis gibbosus*"; (xlviii) W. W. Cort, L. Olivier & S. Brackett "The relation of physid and planorbid snails to the life cycle of the strigeid trematode, *Cotylurus flabelliformis* (Faust, 1917)"; (xlix) F. M. White "Studies on the morphology of a new species of *Cystidicola* (Nematoda: Thelaziidae) from the swim bladder of the lake trout"; (l) B. B. Morgan "The Physalopterinae (Nematoda) of North America"; (li) B. G. Chitwood "Soil sterilization for nematodes"; (lii) H. J. Van Cleave "Some comparisons of Acanthocephala in marine fishes of the Atlantic and Pacific coasts"; (liii) S. A. Edgar "A method of evaginating tapeworm cysticerci"; (liv) A. B. Leonard & A. E. Leonard "Tissue response to unencysted larvae of *Taenia pisiformis* in rabbits"; (lv) T. von Brand & G. F. Otto "Calcification in *Capillaria hepatica* infections"; (lvi) G. W. Wharton "The mechanics of respiration in *Camallanus trispinosus*"; (lvii) G. L. Graham "Partial control of seasonal variation in the progeny characteristics of a pure line of *Strongyloides ratti*"; (lviii) C. V. Anderson & A. B. Leonard "Immunity produced in rats by the intestinal

phase of *Trichinella* infection"; (lix) E. A. Mauss "Fractionation of rabbit serum containing anti-*Trichinella* immune-body"; (lx) R. W. Wilhelmi "The precipitin reaction applied to certain problems in parasitology"; (lxi) J. E. Ackert & A. A. Case "Beetle supply in experimental fowl taeniasis"; (lxii) J. H. Wilmoth "A further note on the cultivation of *Taenia taeniaeformis* larvae in vitro with a preliminary report on the respiration of these parasites"; (lxiii) H. Zaiman "The effect of host vitamin E deficiency on *Trichinella spiralis* infections".

B.G.P.

296—Journal of the South African Veterinary Medical Association.

- a. WILSON, S. G., 1940.—" *Thelazia rhodesi* as a primary cause of ophthalmia in cattle in Nyasaland." **11** (4), 158-160.

297—Journal of Tropical Medicine and Hygiene.

- a. CAWSTON, F. G., 1940.—" Characteristics of the fresh-water mollusc found in Southern Rhodesia and the Union of South Africa and popularly known as *Physopsis africana* Krauss." **43** (22), 262-264.

298—Journal of the University of Bombay.

- a. VYAS, V. A., BOKIL, K. V. & NARGUND, K. S., 1940.—" Synthetical anthelmintics. Part I. α -substituted- γ -butyrolactones." New Series **9** (3), 145-149.

299—Kinderärztliche Praxis.

- *a. HEMPEL, H. C., 1940.—" Die Bedeutung der Oxyuriasis und ihre Beseitigung durch Lubisan-Bayer." **11**, 149-154.

300—Klinische Monatsblätter für Augenheilkunde und für Augenärztliche Fortbildung.

- a. SEMADENI, B., 1940.—" Erster Nachweis in der Schweiz am Spaltlampenmikroskop von zahlreichen Mikrofilarien der beiden Augen." **104**, 417-422.

(300a) [This paper appeared originally in Schweizerische Medizinische Wochenschrift, 1940, 70, 275-276. For abstract see Helm. Abs., Vol. IX, No. 47a.]

301—Liječnički Vjesnik.

- a. VIŠNJOVSKI, I., 1940.—" Prilog simptomatologiji bubrežnih i jetrenih ehinokoka." **62** (4), 198-200.
b. STEPČIŠIN, M., 1940.—" Ileus verminosus." **62** (4), 204-207.

(301a) [Symptomatology of renal and hepatic echinococcosis.]

* Original not available for checking or abstracting.

302—Lingnan Science Journal.

- a. CHEN, H. T., 1940.—“Morphological and developmental studies of *Paragonimus iloktsuenensis* with some remarks on other species of the genus (Trematoda: Troglotreematidae).” 19 (4), 429-530.
- b. HU, S. M. K., 1940.—“*Culex pallidothorax* Theobald as a carrier of *Wuchereria bancrofti* Cobbold.” 19 (4), 543-547.

(302a) Chen considers that *Paragonimus westermanni*, *P. kellicotti*, *P. ohirai*, *P. compactus* and *P. iloktsuenensis* are distinct species. A detailed and illustrated description is given of the adult *P. iloktsuenensis* which occurs as natural infections in rats. It resembles the other species of the genus except in the cuticular spines which are typically elongated, broad at base and tapering to the tip. The ovary is more delicately branched, the seminal receptacle is larger, the seminal vesicle is curved, and the central mass of the testes is slenderer. The intermediate hosts are *Assiminea lutea* and the crabs *Sesarma dehaani* and *S. sinensis*. While *P. westermanni* breeds in the hills, *P. iloktsuenensis* breeds in the plains. The life-history of *P. iloktsuenensis* is also described in detail and the paper includes a useful historical review. R.T.L.

(302b) Working in Shanghai, Hu confirms Iyengar's opinion that *Culex pallidothorax* is an efficient intermediate host for *Filaria bancrofti*. It is not likely to play an important role in that region however as it is not a common household mosquito. R.T.L.

303—Lloydia.

- a. REIBER, R. J., BYRD, E. E. & PARKER, M. V., 1940.—“Certain new and already known nematodes from Amphibia and Reptilia.” 3 (2), 125-144.

(303a) From a survey of amphibians and reptiles of the southern United States, Reiber et al. have collected 15 species of nematodes, 7 of which are new to science. The new species are: *Oswaldocruzia* (*Oswaldocruzia*) *euryceae* n. sp. from *Eurycea guttolineata*; *Kalicephalus floridanus* n. sp. and *Physaloptera variegata* n. sp. from *Coluber constrictor constrictor*; *Oxysomatium georgianum* n. sp. from *Rana pipiens*; *Strongyluris ranæ* n. sp. from *Rana catesbeiana*; *Spironoura hylæ* n. sp. from *Hyla cinerea cinerea*; and *S. spiculata* n. sp. from *Rana grylio*. A.E.F.

304—Lyon Chirurgical.

- a. CREYSSEL & HUTINEL, 1940.—“Kyste hydatique récidivé du corps thyroïde.” 36 (6), 710-715.

305—Medicina. Kaunas.

- a. VALTERIS, K., 1940.—“Oxyuriasis'o (enterobiosis'o) klausimu sąsąyje su retu perimetritis oxyurica atsitikimu.” 21 (4), 293-306.

(305a) [The problem of enterobiasis in connection with a rare case of oxyuric perimetritis.]

306—Medicina. México.

- *a. ORTIZ MARIOTTE, C. & ROMANO MONTERO, A., 1940.—“Uncinariasis en Mineral del Monte Hgo.” 20, 291-298.

307—Mémoires de l'Académie de Chirurgie.

- a. SABADINI, L. & IMBERT, M., 1940.—“À propos d'une épidémie de bilharziose urinaire en Algérie. Remarques et déductions.” 66 (1/2), 14-19.

(307a) Last May occurred in Saint-Aimé the first epidemic of urinary schistosomiasis to be recorded from Algeria, as a result of which Sabadini & Imbert undertook a cystoscopic survey. Examination of a garrison of 120 Senegalese troops at Orléansville revealed 80% positive, in the entire absence of clinical symptoms, and it is thought that this is a likely source of the Algerian epidemic. Typical endovesical lesions, such as the “sandy patch”, are described. The authors recommend chemical measures against the intermediary, chemical sterilization of urine, general treatment of cases with Fouadin, and local treatment of endovesical lesions by electro-coagulation.

B.G.P.

308—Mișcarea Medicală Română.

- *a. GRAMA, G. I., 1940.—[A case of primary muscular echinococcosis.] 13, 212-214.

309—Münchener Medizinische Wochenschrift.

- *a. DRENKHAHN, R., 1940.—“Die Trichinose und ihre Behandlung.” 87, 403-404.
 *b. WOLFF, A., 1940.—“Die Trichinose und ihre Behandlung. (Zu dem gleichen Artikel von R. Drenkhahn).” 87, p. 546.

310—Natural and Applied Science Bulletin.

- a. CHANCO, jr., P. P., 1940.—“Incidence of *Enterobius vermicularis* in the caecum of man at autopsy.” 7 (3), 291-295.
 b. GARCIA, E. Y. & PESIGAN, T. P., 1940.—“The (IHP) centrifugal flotation method for the diagnosis of helminth ova and protozoan cysts in feces.” 7 (3), 299-303.
 c. PESIGAN, T. P., 1940.—“Comparative efficiency of zinc sulphate and cupric nitrate technics for the diagnosis of helminth ova and protozoan cysts in feces.” 7 (3), 305-317.

(310a) From the examination of 200 caeca taken from adult cadavers in the Manila morgue, Chanco found that 41% were infested with *Enterobius*. The incidence appeared to be slightly higher in males, and highest (in both sexes) in the age-group 21-30.

B.G.P.

(310b) Garcia & Pesigan give details of a technique for the centrifugal flotation of parasitic eggs and cysts from faeces, involving repeated washing with water and centrifuging until the supernatant fluid is clear, and then flotation with 30% cupric nitrate solution (sp. gr. 1.180). Iodine is added

* Original not available for checking or abstracting.

after the first washing. These cupric nitrate preparations have the advantage of not drying up, and of presenting a colour-contrast between stained debris and unstained eggs. B.G.P.

(310c) As a result of comparing qualitatively cupric nitrate and zinc sulphate for egg and cyst flotation from 100 stools, Pesigan found no difference between them. Both, used at sp. gr. 1.180, gave as positives 96% of the total positives, whereas only 75% were positive by repeated direct faecal smears. B.G.P.

311—Natuurkundig Tijdschrift voor Nederlandsch-Indië.

- a. BONNE, C., 1940.—“Zoetwatermosselen als bron van infectie voor een ziekte van den mensch: echinostomiasis.” 100 (1), 1-8.

(311a) Bonne gives an illustrated redescription of the life-history of the echinostome infesting natives in Celebes. He includes figures of the 1st intermediary, *Anisus sarasinorum*, and of two of the 2nd intermediaries: *Viviparus javanicus rudipellis* and the fresh-water mussel *Corbicula linduensis*. The latter is the source of human infestation. B.G.P.

312—Novi Khirurgicheski Arkhiv.

- *a. ZAMOSHCHIN, M. B., 1940.—[Perforation of the intestine by ascarids.] 45, 255-258.

313—Onderstepoort Journal of Veterinary Science and Animal Industry.

- a. ORTLEPP, R. J., 1940.—“South African helminths, Part VII. Miscellaneous helminths, chiefly cestodes.” 14 (1/2), 97-110.
b. MÖNNIG, H. O., 1940.—“Treatment against lungworms (*Dictyocaulus filaria*) in sheep.” 14 (1/2), 111-114.
c. MÖNNIG, H. O., 1940.—“*Marshallagia marshalli* (Ransom, 1907) Orloff, 1933 and a new species of this genus from sheep in South Africa.” 14 (1/2), 115-119.

(313a) Of 5 South African cestodes described, *Catenotaenia capensis* from the striped mouse, *Rhabdomys pumilio vittatus*; *Dilepis megacirrosa* from the golden mole, *Chrysochloris asiatica*; and *Biuterinoides upupai* n. g., n. sp. from *Upupa africana* are new. From the surricat, *Suricata suricatta*, *Ascaris suricattae* n. sp. is also recorded. R.T.L.

(313b) Mönnig's experiments in sheep with intratracheal injections of iodine and pyrethrin solutions were ineffective in removing *Dictyocaulus filaria*, although the egg output appeared to be reduced for a number of days. The administration was done according to Orloff's method of holding the sheep in order to allow the injection to pass into the most commonly affected parts of the lung. J.W.G.L.

(313c) The presence of *Marshallagia marshalli* in sheep in South Africa is recorded for the first time, and a single male specimen of *M. brevispiculum* n. sp. is reported. R.T.L.

* Original not available for checking or abstracting.

314—Orvosi Hetilap.

- a. KISS, D., 1940.—“Az izomechinococcusról.” 84 (31), p. 396.

(314a) [Hydatidosis of the muscles.]

315—Parasitology.

- a. REES, G., 1940.—“Studies on the germ cell cycle of the digenetic trematode *Parorchis acanthus* Nicoll. Part II. Structure of the miracidium and germinal development in the larval stages.” 32 (4), 372-391.
 b. CAWSTON, F. G., 1940.—“Some difficulties in determining the life cycle of *Fasciola*.” 32 (4), 397-398.

(315a) The development of the miracidium and subsequent larval stages of *Parorchis acanthus* is described. The fertilized ovum gives rise to an ectodermal and a propagatory cell. From the former the soma arises, the latter becomes the germ cell. This germ cell develops in the same way into the first redia generation. The second redia generation is formed from the germ cell in the body cavity of the parent redia, and the cercariae by a similar process arise in the body cavity of the daughter rediae. The germ cells in the cercaria become differentiated later into the genitalia of the adult. Thus germinal lineage occurs throughout the life-cycle and there is no evidence that rediae or cercariae are derived from cells in the wall of the redia.

R.T.L.

(315b) Pointing out that the experimental infestation of *Lymnaea* spp. with *Fasciola hepatica* is often a matter of great difficulty, Cawston briefly discusses such possible explanations as the accidental use of the wrong species of snail or of *Fasciola*, or the artificiality of taking eggs from the host's bile ducts and incubating them in water. It is also possible that *F. hepatica* has hitherto unrecognized intermediaries.

B.G.P.

316—Paris Médical.

- a. DESCHIENS, R., 1940.—“Considérations épidémiologiques et prophylactiques sur les infestations parasitaires de l'appareil digestif aux armées.” 30 (22/23), 283-287.

317—Physiological Reviews.

- a. TALIAFERRO, W. H., 1940.—“The mechanism of acquired immunity in infections with parasitic worms.” 20 (4), 469-492.

(317a) Taliaferro reviews our present information on acquired helminth immunity and points out that as the various immunological mechanisms are fundamentally the same as those operating against other infectious and non-infectious antigenic agents, helminths will be used increasingly in immunological work. For by their large size it is easy to study directly the effects of immune mechanisms on the parasite and its metabolism, to locate the parasites and to obtain easily large quantities of parasite material for the production of antigens and the like. Precipitins are of great importance in the production of host allergy and may even be the cause of various immobilizing and stunting effects on the parasite. Helminth immunity rests primarily on humoral

responses. Two types of immunity have been demonstrated in larval cestode immunity, one being acquired early in the infection and the other late. Both cause the production of antibodies but that of the "late" type cannot be absorbed by freshly ground worm material. Finally Taliaferro points out some of the problems needing further study, particularly those which can be most advantageously examined in helminth infections. P.A.C.

318—Plant Disease Reporter.

- a. NEWHALL, A. G. & CHITWOOD, B. G., 1940.—"The status of onion bloat in 1940." **24** (17), 350-351.
- b. GRAHAM, T. W., 1940.—"The nematode *Eucephalobus oxyuroides* apparently causing disease of tobacco roots." **24** (17), 351-352.
- c. MILLER, J. O., 1940.—"Root knot injury to peach trees and other plants in Kansas." **24** (18), 365-367.

(318a) Newhall & Chitwood report on the occurrence of "bloat" in onions caused by the stem eelworm, *Ditylenchus dipsaci*, grown on mucklands in Madison County, New York. They suggest that flooding, following excessive rainfall, may be a means of spread of the parasite since new infestations were found near ditch banks. They show that sulphur, at dressings which seriously reduce the crop, is inefficient as a nematocide, whereas chloropicrin is efficient and has a residual beneficial effect on crop yield even two years after application. T.G.

(318b) Graham found the nematode, *Eucephalobus oxyuroides* (de Man) Steiner, as the constantly predominant form present in 30 out of 40 collections of tobacco roots from Carolina which showed lesions in the root cortex. Affected plants were stunted, yellow and lacked vigour. He suggests that this species of nematode was parasitizing the roots. T.G.

(318c) Miller reports on the occurrence of galls caused by the root-knot nematode, *Heterodera marioni*, on the roots of young peach trees from an orchard in Kansas. Prior to 1932 the land had been used for truck and vegetable crops; from 1932 to 1937 it carried blackberries; then for one year it was cropped again with vegetables and in the spring of 1938 the peach trees were planted. Another peach orchard, half a mile away, planted at the same time and with the same variety of peach was free from root-knot. This land had previously been cropped, first with cereals and then from 1932 to 1937 with lucerne. The same parasite is briefly reported from tomatoes and eggplant. T.G.

319—Policlinico (Sezione Chirurgica).

- a. LIGAS, A., 1940.—"Sulla costituzione della capsula avventizia nell'echinococco in relazione alle sue diverse sedi. (Studio istologico)." **47** (5), 188-206.

320—Policlinico (Sezione Pratica).

- *a. SILVESTRONI, E., 1940.—"Sulla cosiddetta anemia perniciosa da botrio-cefalo." **47**, 1008-1012.

* Original not available for checking or abstracting.

321—Poultry Science.

- a. LUTTERMOSER, G. W., 1940.—“Meal beetle larvae as intermediate hosts of the poultry tapeworm *Raillietina cesticillus*.” 19 (3), 177-179.

(321a) Luttermoser has shown experimentally that the meal beetles, *Tribolium castaneum* and *T. confusum*, can act as vectors for *Raillietina cesticillus*. The larvae of these beetles were infested and pupae and imagines developing from such larvae were found to be carrying viable larval cestodes. Metamorphosis did not destroy all the cysticercoids. He suggests that other beetles may prove to be important in the completion of the life-history of this and other species of poultry cestodes.

P.A.C.

322—Prensa Médica Argentina.

- *a. JORGE, J. M. & GOÑI MORENO, I., 1940.—“Hidatidosis pulmonar. Cirugía de las membranas hidatídicas encarceladas.” 27, 1369-1374.

323—Presse Médicale.

- a. SAAD, B., 1940.—“La trichinose à propos d'une épidémie observée à Beyrouth.” 48 (49/50), 556-557.

(323a) 30% of the pigs slaughtered at Beirut were found infested with trichinosis. Saad reports that this led to an epidemic last winter in which more than 500 persons were involved. No fatalities occurred and, after the customary preventive measures had been enforced, the epidemic subsided. Trichinosis has never before been observed in Syria and Lebanon.

B.G.P.

324—Proceedings of the Helminthological Society of Washington.

- a. KRULL, W. H., 1940.—“Investigations on possible intermediate hosts, other than oribatid mites, for *Moniezia expansa*.” 7 (2), 68-71.
b. MCINTOSH, A., 1940.—“A new taenioid cestode, *Cladotaenia foxi*, from a falcon.” 7 (2), 71-74.
c. LUTTERMOSER, G. W., 1940.—“The effect on the growth-rate of young chickens of infections of the tapeworm *Hymenolepis carioca*.” 7 (2), 74-76.
d. PRICE, E. W., 1940.—“A redescription of *Onchocotyle emarginata* Olsson, 1876 (Trematoda: Monogenea).” 7 (2), 76-78.
e. DIKMANS, G., 1940.—“A note on the genera *Nematospiroides* Baylis, 1926, and *Sincosta* Roe, 1929 (Nematoda, Heligmosomidae), with descriptions of two new species of *Nematospiroides*.” 7 (2), 79-82.
f. CAUTHEN, G. E., 1940.—“A method of culturing large numbers of *Haemonchus contortus* larvae from eggs in cattle feces.” 7 (2), 82-83.
g. HILL, C. H., 1940.—“The prevalence of larvae of *Trichinella spiralis* in the hearts, livers, stomachs, and kidneys of experimentally infected swine.” 7 (2), 83-84.
h. GUTHRIE, J. E., 1940.—“Preliminary observations on the efficacy of diphenylamine for the removal of intestinal nematodes from dogs.” 7 (2), 84-85.
i. FOSTER, A. O. & HABERMANN, R. T., 1940.—“Endoparasites of aged horses and mules at the Beltsville Research Center of the U.S. Department of Agriculture.” 7 (2), 85-87.

* Original not available for checking or abstracting.

- j. WALTON, A. C., 1940.—“Notes on amphibian parasites.” 7 (2), 87-91.
- k. BLANTON, F. S. & CHITWOOD, B. G., 1940.—“The tolerance of 40 varieties of narcissus to a combined hot-water and formalin treatment based on the 1938-1939 experiments.” 7 (2), 91-94.
- l. TAYLOR, A. L. & McBETH, C. W., 1940.—“Preliminary tests of methyl bromide as a nematocide.” 7 (2), 94-96.
- m. ALLEN, M. W., 1940.—“*Anomyctus xenurus*, a new genus and species of Tylenchoidea (Nematoda).” 7 (2), 96-98.
- n. BASSEN, J. L., 1940.—“*Rhabditis chitwoodi* n. sp., a nematode found in diseased *Sagittaria* corms, with remarks on *Rhabditis conica* (Reiter), n.comb.” 7 (2), 98-101.
- o. BASSEN, J. L., 1940.—“*Panagrolaimus hygrophilus* n. sp., a nematode found in decayed tubers of the waterlily root, *Nelumbium nucifera* Gaertn.” 7 (2), 101-103.

(324a) Krull is of the opinion that *Moniezia expansa* can only complete its life-cycle in an oribatid mite. However, many invertebrates were seen to take up eggs of the cestode and pass them unharmed. He suggests that such invertebrates may play an important part in spreading the parasite by depositing them in locations favourable to their survival, thereby making them available to the natural vector over a long period. P.A.C.

(324b) McIntosh describes *Cladotaenia foxi* n. sp. from a falcon, *Falco peregrinus anatum*, in Washington, D.C. It can be distinguished by the presence of a short uterus which does not reach further than the level of the genital pore, and by the possession of 58 rostellar hooks of a characteristic shape, and of from 100 to 130 testes in each proglottis. He completed the life-cycle, using *Mus musculus* as vector. He concludes with some general remarks on the genus as a whole. P.A.C.

(324c) Luttermoser was unable to show experimentally that the presence of *Hymenolepis carioca* in young chickens was injurious and suggests that this may be due to the fact that the worm has neither rostellar nor sucker hooks. P.A.C.

(324e) Dikmans concurs in Chandler's opinion that *Sincosta aberrans* is a synonym of *Nematospiroides dubius*. Descriptions are given of *N. longispiculatus* n. sp. from *Microtus pennsylvanicus* and *Ondatra zibethica*, and *N. carolinensis* n. sp. from *Clethrionomys gapperi*, and a key is provided for the 3 species which now form the genus *Nematospiroides*. R.T.L.

(324f) Cauthen recommends the addition of about 10% (by weight) of steam-sterilized sphagnum moss to cattle faeces for culturing *Haemonchus contortus* larvae in 2½ to 3-gallon pails. Using up to 4.38 kg. of faeces per culture, and extracting with a specially made Baermann funnel after a week, he obtained up to ½ million larvae per culture. B.G.P.

(324g) Various organs of swine infected experimentally with *Trichinella spiralis* were digested and examined for trichina larvae. Five out of 52 hearts gave 1 to 13 larvae, 5 out of 38 stomachs gave 7 to 41 larvae, and 7 out of 38 livers gave 1 to 6 larvae per individual. None of the kidneys were infected: as the larvae were active and normal it would appear probable that they were infective. These organs should therefore be thoroughly cooked or processed before being eaten. R.T.L.

(324h) Diphenylamine which, combined with sulphur forms phenothiazine, when administered to dogs in doses of 3 to 10 g. per dog removed 64.2% of 291 hookworms from 6 dogs, 61.9% of 21 ascarids from 3 dogs, and 83.6% of 537 whipworms from 5 dogs. No symptoms of intoxication were observed. R.T.L.

(324i) Foster & Habermann have collected 33 nematode and one cestode species from horses over 10 years of age at Beltsville. In 9 of the animals *Strongylus* spp. varied from 0 to 40 and the cylicostomes from 8,122 to 81,962. It is suggested that the transition from the subclinical to clinical state in the average horse occurs when the number of worms ranges from 30,000 to 50,000. R.T.L.

(324j) In a collection of helminths from amphibia of the region around the Gulf of Mexico, *Aplectana mexicana* n. sp. from *Bufo simus*; *A. hamato-spacula* n. sp. from *Bufo peltoccephalus*, *Hyla eximia* and *Microhyla carolinensis*; and *Pharyngodon bassii* n. sp. from *Hyla septentrionalis* occurred. R.T.L.

(324k) Narcissus bulbs submitted to hot-water treatment for the control of the bulbeel worm may fail to gain as much in weight during the subsequent growing season as untreated bulbs. Blanton & Chitwood set out the results of a comparison of treated and untreated narcissus bulbs of 40 named varieties. Treatment consisted of a presoak in water for 2 hours at 70° to 80°F. followed by a bath in 1 : 200 formalin for 4 hours at 110°F. T.G.

(324l) Preliminary tests indicate that methyl bromide is an effective soil nematocide against *Heterodera marioni* and free-living nematodes and its use for the fumigation of greenhouse and seedbed soils is suggested. It is unsuccessful against *H. marioni* in the living tissue of tomato plants. R.T.L.

(324m) Allen describes and figures *Anomyctus xenurus* n. g., n. sp., an aphelenchoid nematode, 25 specimens of which were obtained from soil collected near the roots of shadscale (*Atriplex confertifolia*), taken west of Utah Lake, U.S.A. Females only were found. The new species is small, measuring 0.68 mm. long, has rather coarse transverse striations of the cuticle, and possesses a long, slender buccal spear without basal swellings. The almost spherical head is offset and possesses an anterior shallow disc-like depression. T.G.

(324n) Bassen describes and figures *Rhabditis chitwoodi* n. sp., a saprophagous nematode which occurred in diseased corms of *Sagittaria* sp. and which he reared on nutrient agar. The new species closely resembles *R. strongyloides* in having the spicules fused for two-thirds of their length distally, but differs from that species in the lip region not being set off from the body. *R. pellio* var. *conica* Reiter, 1928 is given specific rank as *R. conica* (Reiter) n. comb. T.G.

(324o) Bassen gives an illustrated account of a cephalob nematode, *Panagrolaimus hygrophilus* n. sp., which occurred in tubers of the water lily *Nelumbium nucifera*, suffering from an internal wet rot. The new species is closely related to *P. rigidus* but differs from it in having a slenderer body, a longer tail, in the structure of the lips, and in the absence of males. T.G.

325—Proceedings of the Oklahoma Academy of Science.

- a. CHESTER, K. S., 1940.—“Heterodera, a readily available substitute for *Ascaris* in demonstrating cleavage.” 20, 93-94.

326—Proceedings of the Society for Experimental Biology and Medicine.

- a. ROSS, B. D., 1940.—“Calcification of trichina cysts *in vitro*.” 45 (2), 531-536.
 b. BLUMBERG, H. & GARDNER, R. E., 1940.—“Adenomatous stomach lesion of the rat associated with heavy *Cysticercus fasciolaris* infestation.” 45 (2), 673-677.
 c. McNAUGHT, J. B. & ZAPATA, E. M., 1940.—“Incidence of *Trichinella spiralis* in garbage-fed hogs in San Francisco.” 45 (2), 701-704.

(326a) Toxic doses of viosterol predispose *Trichinella* cysts both *in vivo* and *in vitro* to calcification. Its action is attributed to a toxic effect on the cyst or the worm. R.T.L.

(326b) Blumberg & Gardner report the occurrence in rats of adenoma in the stomach following infection with eggs of *Taenia taeniaeformis*. The stomachs were thickened and enlarged up to twice normal size, with a thick secretion of mucus. They describe the histological changes that occurred in these rats. P.A.C.

(326c) An examination by digestion and microscopical techniques of the diaphragms of 495 garbage fed pigs, slaughtered in San Francisco, showed *Trichinella spiralis* infection in 20, i.e. 4.04%. McNaught & Zapata, in giving these results, point out that this is 20 times greater than in Canadian pigs fed with *boiled* garbage. R.T.L.

327—Quarterly Journal of Microscopical Science.

- a. VICKERS, G. G., 1940.—“On the anatomy of *Cercaria macrocerca* from *Sphaerium corneum*.” 82 (2), 311-326.

328—Records of the Australian Museum.

- a. JOHNSTON, T. H. & MAWSON, P. M., 1940.—“On a collection of nematodes from Australian marsupials.” 20 (5), 360-366.

(328a) Included in Johnston & Mawson's descriptions are the following new species: *Contracaecum erraticum* from a wallaby, *Macropostrongylus irma* from the stomach of *Wallabia irma*, and *Zoniolaimus eugenii* from *Thylogale eugenii*. B.G.P.

329—Reports on the Collections obtained by Allan Hancock Pacific Expeditions, 1932-1938.

- a. MANTER, H. W., 1940.—“Digenetic trematodes of fishes from the Galapagos Islands and the neighboring Pacific.” 2 (14), 329-497.
 b. VAN CLEAVE, H. J., 1940.—“The Acanthocephala collected by the Allan Hancock Pacific Expedition, 1934.” 2 (15), 501-527.
 c. MANTER, H. W., 1940.—“The geographical distribution of digenetic trematodes of marine fishes of the tropical American Pacific.” 2 (16), 531-547.

(329a) Manter reports 82 species of digenetic trematodes from 80 species of marine fishes from the tropical American Pacific. Seven new genera and 53 new species are included. The new forms, listed family by family, are:—ASPIDOGASTRIDAE; *Lobatostoma pacificum* n. sp. BUCEPHALIDAE; *Bucephalus varicus* nom. nov. for *B. polymorphus* of Nagaty, 1937, *B. introversus* n. sp., *Prosorhynchus rotundus* n. sp., *P. gonoderus* n. sp., *P. pacificus* n. sp. GYLIAUCHENIDAE; *Choanodera caulolatlili* n. g., n. sp. ALLOCREADIIDAE; *Lepocreadium bimarinum* n. sp., *Opechona pharyngodactyla* n. sp., *Lepidapedon hancocki* n. sp., *Pseudolepidapedon balistis* n. sp., *Pseudocreadium scaphosomum* n. sp., *P. spinosum* n. sp., *Anisoporus eucinostomi* n. sp., *A. thyrinopsi* n. sp., *Dactylostomum vitellosum* n. sp., *Opocoelus mexicanus* n. sp., *O. xenistii* n. sp., *Opegaster acuta* n. sp., *O. pentedactyla* n. sp., *Coitocaecum tropicum* n. sp., *Opocoelina pacifica* n. sp., *Parvacreadium bifidum* n. g., n. sp., *Bianium adplicatum* n. sp., *Myzotus vitellosum* n. g., n. sp., *Plagioporus gastrocotylus* n. sp., *Podocotyle mecopera* n. sp., *P. brevisformis* n. sp., *Labrifer secundus* n. sp. ACANTHOCOLPIDAE; *Stephanostomum megacephalum* n. sp., *S. longisomum* n. sp., *S. multispinosum* n. sp., *S. hispidum* n. comb. for *Echinostephanus hispidus* Yamaguti, 1934, *S. anisotremi* n. sp., *Dihemistephanus brachyderus* n. sp. MONORCHIDAE; *Proctotrema longicaecum* n. sp., *P. costaricae* n. sp., *Paramonorchoides bivitellosus* n. sp., *Telolecithus tropicus* n. sp., *Proctoeces magnorus* n. sp. ACCACOELIIDAE; *Tetrochetus proctocolus* n. sp. HETEROPHYIDAE; *Paracryptogonimus americanus* n. sp., *Siphoderoides vancleavei* n. g., n. sp. HEMIURIDAE; *Parahemiurus ecuadori* n. sp., *Elytrophallus mexicanus* n. g., n. sp., *Mecoderus oligoplitis* n. g., n. sp., *Lecithochirium magnaporum* n. sp., *L. muraenae* n. sp., *Theletrum lissosomum* n. sp., *T. gravidum* n. sp., *Aponurus trachinoti* n. sp., *Leurodera pacifica* n. sp., *Gonocercella pacifica* n. g., n. sp. SYNCOELIIDAE; *Paronatrema mantae* n. sp. APOROCOTYLIDAE; *Psettarium tropicum* n. sp. The paper concludes with a host-list. A.E.F.

(329b) This collection of Acanthocephala includes *Gorgorhynchus lepidus* n. sp. from *Cratinus agassizii*, *G. clavatus* n. sp. from *Paralabrax humeralis*, *Tegorhynchus pectinarius* n. sp., and *Filosoma bucerium* n. sp. *Gorgorhynchus gibber* is found to be a synonym of *G. medius*, the latter becoming type of the genus. *Nipporhynchus katsuwonis* becomes a synonym of *N. ornatus*, which latter becomes type of the genus. The material also provides additional data for *Southwellina hispida* and *Centrorhynchus spinosus*. A.E.F.

330—Revista de la Asociación Médica Argentina.

- *a. MASCIOTTRA, E., 1940.—“Hidatidosis residual del colédoco.” 54, 466-471.
- *b. DELRÍO, J. M. A., 1940.—“Contribución al tema: ‘Hidatidosis residual del colédoco.’” 54, 472-473.

331—Revista de Biología e Higiene.

- a. MEIRA, J. A. & AMARAL, A. D. F., 1940.—“Considerações sobre disseminação helmíntica entre operários com especial referência aos casos positivos para *S[trongyloides] stercoralis* e *S[chistosoma] mansoni*.” 10, 119-137.

* Original not available for checking or abstracting.

332—Revista Chilena de Historia Natural.

- a. NEGHME R., A., 1940.—“Alternancia muy irregular de los poros genitales en *Taenia solium* L. 1758.” 43 (for the year 1939), 97-99.

(332a) Neghme describes an interesting specimen of *Taenia solium* in which the genital pores showed markedly irregular alternation. In this species the pores are usually regularly alternate but in this particular specimen there were blocks of 6 or 7 segments, all with pores on the same side.

P.A.C.

333—Revista de la Facultad de Medicina. Bogotá.

- *a. PATIÑO CAMARGO, L., 1940.—“Helminthiasis y protozoosis en Colombia.” 8, 375-411.

334—Revista Fluminense de Medicina.

- *a. MACHADO, O., 1940.—“Pesquisa de ovos de helmintos.” 5, 167-170.

335—Revista Médica de Yucatán.

- *a. SANTOS ZETINA, F., 1940.—“Contribución al estudio del parasitismo intestinal en Yucatán.” 20, 271-277.

336—Revista de Medicina Tropical y Parasitología, Bacteriología, Clínica y Laboratorio.

- a. SANDGROUND, J. H., 1940.—“*Plagiorchis javensis* n. sp. a new trematode parasitic in man.” 6 (4), 207-211.

(336a) Sandground describes *Plagiorchis javensis* n. sp. from a single specimen from the small intestine of a Javanese native; it resembles *P. muris* and is distinct from the species described by Africa & Garcia in 1937, from a Philippine native, which is named *P. philippinensis*.

N.G.S.

337—Revista Medico-Cirurgica do Brazil.

- *a. FONSECA, jr., O. DA, 1940.—“Notas sobre o tratamento da filariose pela Simaruba.” 48, 307-308.

338—Revista de Neurologia e Psychiatria de São Paulo.

- *a. LANGE, O., 1940.—“Síndrome liquórica da cisticercose encéfalo-meningéa.” 6, 35-47.

339—Revista de la Sociedad Mexicana de Historia Natural.

- a. CHAVARRÍA CH., M., 1940.—“Platelmintos determinados en los animales domésticos de México.” 1 (2), 97-102.

(339a) [This paper appeared also in Revista Mexicana de Medicina Veterinaria, 1939, 2, 13-18. For abstract see Helm. Abs., Vol. VIII, No. 595b.]

* Original not available for checking or abstracting.

340—Revue Agricole de l'Île Maurice.

- a. WIEHE, P. O., 1940.—“La maladie de la racine sur la P.O.J. 2878.” 19 (1), 8-11.

(340a) Wiehe describes a disease of the sugar cane P.O.J. 2878, occurring in various parts of the island of Mauritius. The roots of affected canes may bear galls due to *Heterodera marioni* but most frequently show small red lesions caused by *Anguillulina similis*. This species was found in all affected canes and it appears to open up the root tissues to invasion by various species of fungi which bring about a more general decay. T.G.

341—Revue Médicale Française d'Extrême-Orient.

- a. GALLIARD, H., 1940.—“Sur la fréquence de la strongyloïdose et de l'ankylostomose au Tonkin.” 18 (1), 1-7.

342—Riforma Medica.

- *a. CACCURI, S., 1940.—“Il cuore nell'anchilostomiasi.” 56, 571-577.

343—Rivista di Chirurgia.

- a. REPETTO, E., 1940.—“Contributo clinico allo studio delle cisti di echinococco della milza.” 6 (2), 69-79.

344—Schweizer Archiv für Tierheilkunde.

- a. GALLI-VALERIO, B., 1940.—“Notes de parasitologie et de technique parasitologique.” 82 (7), 279-285; (8), 352-358; (9), 387-392.

(344a) Galli-Valerio publishes a series of observations dealing with the distribution of parasites, including both helminths and protozoa, in the Swiss fauna. He remarks on the importance of parasites in the production of disease and of the dangers of repopulating districts with new stock without first ascertaining the parasite fauna of the colonizing animals. Finally, there is a note dealing with fixation and the mounting of specimens. P.A.C.

345—Science.

- a. WALL, L. D., 1940.—“Life history of *Spirorchis parvus* (Stunkard) Trematoda: Spirorchidae.” 92 (2390), 362-363.

(345a) The life-history of *Spirorchis parvus* from *Chrysemys picta* has been traced experimentally in *Helisoma trivolvis* and *H. campanulatum*. As the cercaria differs from *Cercaria wardi* Miller, 1923 only in the presence of a dorsal crest which is not mentioned by Miller, these 2 forms may be identical.

R.T.L.

* Original not available for checking or abstracting.

346—Scientific Agriculture.

- a. HASTINGS, R. J., 1940.—“Transfer of the bulb nematode—*Ditylenchus dipsaci* from *Tropaeolum polyphyllum*, a new host, to potatoes.” 21 (3), 115-116.

(346a) Tubers of *Tropaeolum polyphyllum* Cav., imported from Holland into British Columbia, were found by Hastings to be attacked by *Ditylenchus dipsaci* which caused a soft rot in them. Using infected material from this source mixed with sterile soil in boxes in which potatoes of 12 different varieties were planted, he was able to show that the worms successfully invaded the potato tubers. Eleven of the varieties were affected, some proving more susceptible than others, whilst one variety named Netted Gem remained free from infection.

T.G.

347—Semana Médica.

- a. PARDINA, J. M., 1940.—“Resumen estadístico sobre 465 exámenes parasitológicos fecales, en el Hospital Nacional de Clínicas.” Año 47, 1 (26), 1558-1559.
- b. BACIGALUPO, J., 1940.—“Método práctico para el diagnóstico de la teniasis por *Taenia saginata*.” Año 47, 2 (30), 184-185.

348—Southern Medical Journal.

- a. SAWITZ, W., D'ANTONI, J. S., RHUDE, K. & LOB, S., 1940.—“Studies on the epidemiology of oxyuriasis.” 33 (9), 913-922.
- b. BROWN, H. W., SHELDON, A. J. & THURSTON, T., 1940.—“The incidence of pinworm (*Enterobius vermicularis*) infection in North Carolina.” 33 (9), 922-925.

(348a) The incidence of *Enterobius* infestation in 6 children's homes in New Orleans, Louisiana, has been determined by the use of the NIH swab, and has been found to be 89.6% of 278 white boys, 60.9% of 87 white girls, 84.1% of 63 coloured boys and 15.9% of 63 coloured girls. By age the incidence increases rapidly during the first 6 years and is high until 14 years, after which it decreases. By age and sex the incidence is slightly lower in girls than in boys up to 9 years of age, after which it falls in girls whilst it remains high up to the age of 14 in boys. No correlation was found between *Enterobius* incidence and the amount of money spent for maintenance or food, nor did extreme frequency of house cleaning or change of underwear bring about any decrease in incidence. Children of comparable age sleeping in dormitories were found to have twice as high an incidence as children sleeping in single or double rooms. Direct contact with infected individuals or contaminated objects appears to be the means of transmission of *Enterobius vermicularis*.

M.R.Y.

349—Southwestern Medicine.

- *a. WHEELER, C. M., 1940.—“Helminthic infections.” 24, 195-199.

* Original not available for checking or abstracting.

350—Sovetskaya Veterinariya.

- a. MAGRADZE, P. G., 1940.—[Technique for the administration of male fern extract for moniezia in lambs.] 1940, No. 1, 25-26. [In Russian.]
- b. VISHNYAKOV, V. V., 1940.—[The diagnosis of coenuriasis in sheep.] 1940, No. 1, 26-27. [In Russian.]
- c. KADENATSII, A. N., 1940.—[Clonorchiasis (liver-fluke disease) in pigs in the Khabarovsk region.] 1940, No. 1, p. 29. [In Russian.]
- d. NOSIK, A. F., 1940.—[Epizootology, diagnosis and treatment of echinococcosis in dogs.] 1940, No. 4, 37-40. [In Russian.]
- e. GVASALIYA, N. A., 1940.—[The treatment of parafilariasis in horses with tartar emetic.] 1940, No. 6, 83-84. [In Russian.]

(350c) Kadenatsii records from 16 to 39 specimens of *Clonorchis sinensis* from 3 pigs at Blagoveshchensk in south-eastern Siberia; this is the first record from the pig outside China. B.G.P.

(350d) Nosik believes that the most successful method of diagnosing *Echinococcus granulosus* in dogs is to give a dose of arecoline and examine the freshly passed faeces for helminths. Complete removal of the parasites can be secured by administration of 0.002 to 0.003 g. of arecoline hydrobromide per kg. body weight followed by male fern in a dose of about 0.2 to 0.3 g. This treatment can be repeated after 10 days and has so far proved itself 100% effective. P.A.C.

(350e) Against Parafilaria in horses, Gvasaliya recommends the intravenous injection of 100 c.c. of 2% aqueous solution of tartar emetic, repeated 3 to 5 times: the injection must not be subcutaneous. B.G.P.

351—Taiwan Igakkai Zassi.

- a. YOSINO, T. & NAKASATO, T., 1940.—“On the prevalence of intestinal parasites among primary school children in Yaeyama County, Okinawa Prefecture.” 39 (8), 1162-1169. [In Japanese: English summary p. 1169.]

352—Transactions of the Royal Society of South Australia.

- a. JOHNSTON, T. H. & MAWSON, P. M., 1940.—“Nematodes from South Australian marsupials.” 64 (1), 95-100.
- b. JOHNSTON, T. H. & SIMPSON, E. R., 1940.—“The adult stage of the trematode, *Leucochloridium australiense*.” 64 (1), 119-124.

(352a) Additional records of nematode species from various marsupial hosts, several of which are new species and hosts, are given by Johnston & Mawson. The new species are *Cloacina vestibulata* n. sp. and *Paramacrostrongylus typicus* n. g., n. sp. from *Macropus melanops*; *Macropostrongylus pearsoni* n. sp. from *Petrogale pearsoni*; *Austrostrongylus thylogale* n. sp. from *Thylogale eugenii*; and *Physaloptera peragale* n. sp. from *Peragale minor*.

R.T.L.

(352b) A description is given of adults with genital arrangements previously described by the authors for the larva of *Leucochloridium australiense* from *Succinea australis*. These adults were found in *Pomatostomus superciliosus* and in *Corcorax melanorhamphus*. R.T.L.

353—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. HARRIS, B. P., 1940.—“Clinical aspects of onchocerciasis in the South Kavirondo district of Kenya Colony.” **34** (3), 233-248.

(353a) Among unusual features shown by cases of dermal onchocerciasis in the South Kavirondo district of Kenya are ichthyotic and elephantoid stages and a tendency to the development of lipomata. Treatment with intravenous injections of antimony sodium tartrate combined with fever therapy gave promising results in one or two cases. R.T.L.

354—Ugeskrift for Laeger.

- *a. BRUN, G. C., 1940.—[Recent remedies for worms.] **102**, 497-499.

355—University of Wyoming Publications.

- a. SIMON, F., 1940.—“The parasites of the sage grouse *Centrocercus urophasianus*.” **7** (5), 77-100.

(355a) Simon records all the known parasites of the sage grouse, *Centrocercus urophasianus*. The following helminths, which are described and illustrated, are included in the list: *Raillietina centrocerci*, *Rhabdometra mullicollis*, *Habronema urophasiana*, *Cheilosporura centrocerci* and *Heterakis gallinae*. A.E.F.

356—Veterinary Medicine.

- a. RAWSON, G. W., 1940.—“Animal parasites and parasitism.” **35** (11), 618-624.
b. ERRINGTON, B. J. & WESTERFIELD, C., 1940.—“Phenothiazine as an anthelmintic for horses and mules.” **35** (12), 688-693.

(356b) Administration of 30 to 90 g. phenothiazine to horses and mules in food without fasting resulted apparently in a marked decrease in the faecal egg-counts. The counts fluctuated greatly from day to day but it is considered that there is sufficient evidence to confirm the high efficiency of phenothiazine in the elimination of mature strongyles from horses and mules. Blood examinations indicated, however, that the anthelmintic caused a decreased red blood cell count and haemoglobin content of the blood proportionate to the dose given, but this returned to its previous level within about 4 weeks. J.W.G.L.

357—Veterinary Record.

- a. TAYLOR, E. L. & SANDERSON, K. M., 1940.—“Phenothiazine—a remarkably efficient anthelmintic.” **52** (36), 635-647.
b. LAPAGE, G., 1940.—“Experiments on the anthelmintic action of phenothiazine.” **52** (36), 648-657.
c. McEWEN, A. D., 1940.—“Comparative tests on the treatment of lambs with phenothiazine and with copper sulphate and nicotine sulphate.” **52** (36), 657-658.

* Original not available for checking or abstracting.

- d. ROWLANDS, W. T., 1940.—“Phenothiazine in parasitic gastritis.” 52 (36), 658-660.
- e. GRAHAME, T., MORGAN, D. O. & SLOANE, J. E. N., 1940.—“Report on phenothiazine as an anthelmintic in horses.” 52 (36), 660-663.
- f. KNOWLES, R. H. & FRANKLIN, A. V., 1940.—“Treatment of equine strongylosis by phenothiazine.” 52 (36), 663-664.
- g. MONTGOMERIE, R. F., 1940.—“Trial of phenothiazine in ascarid infestation in dogs.” 52 (36), p. 665.
- h. PURVIS, G. B., 1940.—“Corrections.” 52 (43), p. 757.
- i. FOGGIE, A., 1940.—“Some experiences with phenothiazine.” 52 (45), 783-785.
- j. ROBERTS, F. H. S., 1940.—“A preliminary note on the efficiency of phenothiazine against some poultry helminths.” 52 (47), 819-820.
- k. TAYLOR, E. L., 1940.—“Mr. Foggie's observations on phenothiazine.” [Correspondence.] 52 (48), p. 842.

(357a) Introducing a symposium on the results of extensive tests of phenothiazine as an anthelmintic, Taylor & Sanderson also discuss the results of their own experiments on about 170 sheep, 60 goats, and a few cattle and horses. Extensive data on egg-counts, worm-counts and weighings are tabulated, and these and the other papers of the symposium (discussed on pp. 639 and 644-647) show that large doses are necessary, that in sheep 10 g. gives almost the maximum effect, that the drug is highly effective against worms of the stomach and large intestine in sheep, that it has little or no effect on *Nematodirus*, anoplocephaline cestodes, or *Fasciola*, and that it is remarkably well tolerated in doses much higher than the anthelmintic dose (except possibly in cattle). Some anomalies are: (i) its good effect against *Trichostrongylus axei* in sheep is not found against the same species in horses; (ii) it is effective against horse ascarids, moderate against those of the pig, and useless against those of the dog. The drug is tasteless and cheap, and the host requires neither preparation nor subsequent purgation. B.G.P.

(357b) Lapage's experiments on some hundreds of sheep, and a few other animals, are held to show that phenothiazine in sheep lowers the egg-count more and maintains it at a low level for a longer time than copper sulphate with or without nicotine sulphate. The small doses given to sheep (5 g.) produced no toxic effects, nor did doses of up to 125 g. in calves and 500 g. in horses, but the drug should be given with caution to young pigs. B.G.P.

(357c) Reporting on the treatment of 5 flocks of lambs with phenothiazine, McEwen states that, in one flock, lambs given 10 fortnightly doses of 30 g. each finished significantly heavier than untreated controls, but apparently not significantly heavier than a third group given copper and nicotine sulphates. In the second flock, without untreated controls, it is claimed that 4 fortnightly doses of 10 g. phenothiazine gave a mean weight increase significantly greater than that in a parallel group given copper and nicotine sulphates. In the other 3 flocks the advantage of phenothiazine over copper and nicotine sulphates was judged from appearance. B.G.P.

(357d) From egg-counts (some of them composite) and weights of sheep, Rowlands concludes that a dose of 20 g. phenothiazine is very effective against parasitic gastritis. One lamb weighing 50 lb. tolerated a dose of 60 g. without ill effects. B.G.P.

(357e) Grahame, Morgan & Sloane have found that phenothiazine in doses of 30 g. or more is effective against horse strongyles, and possibly also against ascarids. Although untreated controls were apparently not used, these authors made 3 counts from each horse, once before dosing, and on each of 3 occasions after dosing. In most cases there was a slight increase on the third occasion, 4 to 6 weeks after dosing. The average weight of the horses used was 1,000 lb. B.G.P.

(357f) From an experiment on 3 horses, given 60 g., 60 g., and 100 g. of phenothiazine respectively, Knowles & Franklin find that it is effective against strongyles. B.G.P.

(357g) Montgomerie treated a litter of 4 puppies, and also 4 out of a litter of 6 puppies (leaving 2 controls), with doses of phenothiazine varying from 6 to 12 g. From egg-counts made on numerous occasions, and counts of worms passed in faeces and found post mortem, Montgomerie concludes that the drug has little or no effect on dog ascarids. There were no symptoms of intoxication. B.G.P.

(357h) Purvis states that *Raillietina* (*Paroniella*) *acanthovagina* and *R. (P.) southwelli* described by him in 1932 from the fowl [Veterinary Record, 1932, 12, 1407-1409: see Helm. Abs., Vol. I, No. 270b] have since been identified by Baylis as identical with *R. (R.) volzi* Fuhrmann, 1905 and *R. (P.) rangoonica* Subramanian, 1928 respectively. R.T.L.

(357i) 40 to 60 g. of powder phenothiazine suspended in water containing 0.5% gum tragacanth gave encouraging results when administered to calves with parasitic gastritis. 13 to 20 g. administered to sheep suffering from infection with several bursate nematodes was much less satisfactory. R.T.L.

(357j) [This paper appeared originally in Australian Veterinary Journal, 1940, 16, 172-174. For abstract see Helm. Abs., Vol. IX, No. 151a.]

(357k) Taylor points out that the low egg-counts for the sheep used by Foggie [see above No. 357i] indicate that these experimental animals were not suffering from parasitic gastritis. R.T.L.

358—Vlaamsch Diergeneeskundig Tijdschrift.

- a. PENNOIT DE COOMAN, E., 1940.—“Verdere onderzoekingen over secundaire echinococcose.” 9 (4), 107-110.

(358a) With intraperitoneal injection of hydatid scolices into mice and rats, De Cooman had more success using material from the horse than Dévé had with sheep material: the nature of the intermediary affects the biological properties of the parasite. She failed to secure secondary infestations by either the enteral or the vaginal route, but of 13 mice in which scolices were injected intratracheally 4 became infested. Though possible, it is improbable that this secondary infestation occurs often under natural conditions. As tested by intraperitoneal injection in mice, up to 85% of scolices survived exposure to temperatures of -2° to -3°C. B.G.P.

359—Wiener Tierärztliche Monatsschrift.

- a. JAHNEL, J., 1940.—“Lebende Nematodenlarven in einem marinierten Hering.” 27 (19), 442-444.

(359a) Jahnel reports the presence of 3 specimens of living ascarids (*Ascaris capsularia* Rud.) in a pickled herring. They measured about $1\frac{1}{2}$ cm. in length and occurred in a fish which was just about to be eaten. Surprisingly, on being placed in physiological salt solution, all three revived and became motile. They remained alive in the salt solution for more than two months.

T.G.

360—Zeitschrift für Infektionskrankheiten, Parasitäre Krankheiten und Hygiene der Haustiere.

- a. BAUDET, E. A. R. F., 1940.—“Experimentelle Infektionen von Ratten und Mäusen mit Trichinen.” 56 (2), 145-151.
b. MATOFF, K., 1940.—“Untersuchungen über den Wanderungsweg der Jungtrichinen im Wirtskörper.” 56 (3), 237-256; (4), 263-296.

(360a) Attempts to correlate the number of *Trichinella* larvae encysted with the number of larvae administered gave such variable results in rats and mice that this method cannot be used for the evaluation of immunity experiments in these hosts. In an addendum Baudet points out that Roth's results [see Helm. Abs., Vol. VIII, No. 79b] show that guinea-pigs are more suitable for this type of investigation.

R.T.L.

(360b) Matoff has made an intensive study of the life-cycle of *Trichinella spiralis*, confirming much of our previous knowledge. He notes that larvae which enter the body cavity, probably by migrating from the capillaries of the peritoneum, the pleura and pericardium, do not die there but are capable of reaching their final home in the musculature. Such larvae may travel via the lymphatics. He was not able to induce trichinosis by intraperitoneal injection of larvae from the abdominal cavity, but this was possible when he used gravid females from the gut of dead animals.

P.A.C.

NON-PERIODICAL LITERATURE.

- 361—*JOHNE, T., 1940.—“Beitrag zur Differentialdiagnose parasitärer und nichtparasitärer Gebilde bei der mikroskopischen Untersuchung des Fleischfresserkotes.” Dissertation, Hannover.
362—*NATH, K., 1940.—“Beiträge zur Parasitenfauna unserer einheimischen Kaltblüter.” Dissertation, Hannover.
363—NILSSON-LEISSNER, G. & NILSSON, F., 1940.—“Herbage plant breeding in Sweden.” In: “The breeding of herbage plants in Scandinavia and Finland.” Imperial Agricultural Bureaux, Joint Publication No. 3, pp. 15-51.

* Original not available for checking or abstracting.

Nilsson-Leissner & Nilsson, in treating of red clover, report (p. 23) that no foreign red clover has proved so valuable as native Swedish strains which are more winter-hardy, more persistent and more resistant to attacks of the stem eelworm, *Tylenchus devastatrix* [= *Anguillulina dipsaci*] and the fungus *Sclerotinia trifoliorum*. On p. 24 they point out that, of certain well known local strains grown in southern Sweden, one called "Karaby" is most reliable for the resistance it offers to stem nematode and clover rot, whilst on p. 29 they show that as a result of breeding work at Svalöf, the new strain "Svalöf Merkur", shows great resistance to the stem eelworm and clover rot and gives very good yields of green fodder. T.G.

364—*SCHMID, F., 1940.—"Diagnose und Bekämpfung der parasitären Krankheiten unserer Haustiere." Berlin, 2te Auflage.

365—*WALTER, H., 1940.—"Untersuchungen über die Widerstandsfähigkeit von Larven verschiedener Strongyliden beim Schaf." Dissertation, Hannover.

366—*WICKE, K., 1940.—"Über den Spulwurmbefall und sonstige Fuchskrankheiten." Dissertation, Hannover.

367—Nordiske Veterinaermøde (5.) i København, Juli 1939. Beretning.

a. NORDSTRÖM, G., 1940.—"Microfilarios hos häst." pp. 937-948. [In Swedish: German summary pp. 947-948.]

b. OLSSON, E., 1940.—"Några ord om pälsdjursjukdomar i Sverige." pp. 1002-1020. [In Swedish: English summary pp. 1018-1019.] [Discussion pp. 1020-1022.]

(367a) Microfilariae, apparently of *Setaria equina*, are found by Nordström in the blood of 60% of foals in central Sweden from February to May, disappearing when the foals are put out to pasture. The intensity of the infestation may reach 1,500 microfilariae per c.c. of blood; it is rare in horses over a year old, and seldom produces symptoms in the absence of other parasitic infestations. He suggests that the absence of blood-sucking insects in winter casts some doubt on their supposed function as vectors.

B.G.P.

(367b) Olsson discusses the diseases that may attack fur-bearing animals in Sweden. Parasitic diseases have become much less important since the general introduction of raised wire netting floors. A case of infection of the chest of an imported blue fox with *Eustrongylus gigas* is described. P.A.C.

368—International Congress (3rd) for Microbiology, New York, 1939. Report of Proceedings, New York, 1940, xi + 883 pp.

a. VAN CLEAVE, H. J., 1940.—"Relationships of the Acanthocephala." [Abstract.] pp. 431-432.

b. GLASER, R. W., 1940.—"The culture of parasitic nematodes." [Abstract.] pp. 432-434.

* Original not available for checking or abstracting.

- c. STEINER, G., 1940.—“Anabiosis in nematodes, its distribution, mechanism and significance.” [Abstract.] pp. 434-435.
- d. AUGUSTINE, D. L., 1940.—“Experimental studies on the validity of species in the genus *Strongyloides*.” [Abstract.] pp. 435-437.
- e. CAMERON, T. W. M., 1940.—“*Metorchis conjunctus* (Cobbold, 1859) Looss, 1899.” [Abstract.] pp. 437-438.
- f. CRAM, E. B., 1940.—“The present status of our knowledge of the distribution of *Enterobius vermicularis*.” [Abstract.] pp. 438-440.
- g. BAER, J. G., 1940.—“The origin of human tapeworms.” [Abstract.] pp. 440-441.
- h. CHITWOOD, B. G. & CHITWOOD, M. B., 1940.—“Treatment of soil for the control of the bulb or stem nema *Ditylenchus dipsaci*.” [Abstract.] pp. 441-442.
- i. DESCHIENS, R., 1940.—“Considérations relatives à la destruction des larves de nématodes parasites par des hyphomycètes prédateurs.” [Abstract.] pp. 442-443.
- j. SCHWARTZ, B., 1940.—“Occurrence of trichinae (*Trichinella spiralis*) in swine in the United States.” [Abstract.] pp. 443-445.
- k. SZIDAT, L., 1940.—“Über Wirtsspezifität bei Trematoden und ihre Beziehung zur Systematik und Phylogenie der zugehörigen Wirtstiere.” [Abstract.] pp. 445-446.
- l. PRICE, E. W., 1940.—“A review of the heterophyoid trematodes, with special reference to those parasitic in man.” [Abstract.] pp. 446-447.
- m. AFRICA, C. M., LEON, W. DE & GARCIA, E. Y., 1940.—“Visceral complications in intestinal heterophyidiasis of man.” [Abstract.] pp. 447-449.
- n. CORT, W. W., 1940.—“Recent studies on schistosome dermatitis in the United States.” [Abstract.] pp. 449-450.
- o. SCOTT, J. A., 1940.—“The relation of schistosomiasis to the control of malaria.” [Abstract.] p. 451.
- p. KOURÍ, P. & RAPPAPORT, I., 1940.—“A new human parasitism in Cuba.” [Abstract.] pp. 452-453.
- q. GRAHAM, G. L., 1940.—“The indirect mode of larval reproduction in the nematode, *Strongyloides ~~rusti~~*.” [Abstract.] pp. 454-456.
- r. TAYLOR, E. L., 1940.—“The bionomics of strongyloid larvae and the epizootology of the helminthiasis of grazing animals.” [Abstract.] pp. 456-457.
- s. SWALES, W. E., 1940.—“Factors influencing the numbers and pathological effects of nematodes parasitic in the alimentary tract of sheep in Canada.” [Abstract.] pp. 457-458.
- t. THOMAS, L. J., 1940.—“Life cycle studies on *Contracaecum spiculigerum*, a nematode from the cormorant, *Phalacrocorax auritus* and other fish-eating birds.” [Abstract.] pp. 458-460.
- u. STUNKARD, H. W., 1940.—“Observations on the development of the cestode, *Bertiella studei*.” [Abstract.] pp. 460-462.

- v. FAUST, E. C. & DeGROAT, A., 1940.—“Proof of hyperinfection (internal autoinfection) in strongyloidiasis.” [Abstract.] p. 462.
- w. SHOPE, R. E., 1940.—“An intermediate host in which swine influenza virus can persist between epizootics.” [Abstract.] pp. 462-463.
- x. STOLL, N. R., 1940.—“Reinfection of grazing sheep with gastro-intestinal nematodes, a synoptic experiment, with follow-up.” [Abstract.] pp. 472-474.
- y. McCOY, O. R., 1940.—“Immunity to trichiniasis in rats.” [Abstract.] pp. 474-476.
- z. OTTO, G. F., 1940.—“The immunological reaction of the canine host to experimental hookworm infection.” [Abstract.] pp. 476-477.
- ba. CHANDLER, A. C., 1940.—“Premunition and immunity in *Hymenolepis diminuta* infections in rats.” [Abstract.] pp. 477-478.
- bb. HOEPPLI, R., 1940.—“Tissue reactions in normal rats and rats infested with *Cysticercus fasciolaris* against injected *Cysticercus* material.” [Abstract.] pp. 478-479.
- bc. TALIAFERRO, W. H. & SARLES, M. P., 1940.—“The cellular reactions during immunity to *Nippostrongylus muris*.” [Abstract.] pp. 479-481.
- bd. ACKERT, J. E., EDGAR, S. A. & FRICK, L. P., 1940.—“Duodenal goblet cells and age resistance to intestinal parasitism.” [Abstract.] pp. 481-482.

(368a) Van Cleave is of opinion that the Cestoda is the only group which can provide the antecedents from which the Acanthocephala could emerge. In support of this view he cites the introvert formation, form of hooks, protonephridial excretory organs, form of the hooked embryos, pseudometamerism and plan of the life-cycle as characteristics common to Cestoda and Acanthocephala. In the discussion Baer cited, among other characters, the presence of a body cavity in Acanthocephala as fundamentally distinguishing them from the Cestoda.

R.T.L.

(368b) The life-cycle of *Neoaplectana glaseri*, parasitic in a Japanese beetle grub in New Jersey, was reproduced in a culture medium composed of dextrose, veal infusion and yeast agar. Large numbers of infective larvae were introduced on a field scale into heavily infested areas with encouraging results. Attempts to culture *Haemonchus contortus* larvae partially succeeded in a nutrient medium composed of sheep liver extract, heat-killed ground yeast, sheep blood and sheep kidney extract. Many larvae reached the fourth larval stage and showed clear differentiation into male and female.

R.T.L.

(368c) The phenomenon of anabiosis, with few exceptions, is restricted in nematodes to soil and plant-invading species. The results of the author's analysis as to its conditioning, structural and functional factors will be reported later.

R.T.L.

(368d) [This paper appears in full in Amer. J. Hyg., Section D, 32, 24-32. For abstract see Helm. Abs., Vol. IX, No. 63f.]

(368e) *Metorchis conjunctus* is widespread in Canada. The snail host there appears to be a species of *Amnicola* but has not yet been experimentally implicated. The cercaria is a typical pleurolophocerca and encysts in the common white sucker, *Catostomus commersonii*. *Metorchis conjunctus* causes catarrhal inflammation with adenomatous growths in the bile ducts resulting in biliary cirrhosis. Synonyms are *M. noveboracensis* Hung, 1936, *M. canadensis* Price, 1929, *M. intermedius* Price, 1929, *M. manitobensis* Allen & Wardle, 1934, all of which have previously been referred to the genus *Parametorchis*.
R.T.L.

(368f) Cram has shown the incidence of the human pinworm, *Enterobius vermicularis*, to be high in various countries where population groups have been tested. Microscopic examination of peri-anal material collected by various kinds of swabs and scrapers before 1937 gave these results: Germany of about 4,000 persons examined, 55% positive; Soviet Russia, of about 7,000 persons, 60% positive; Sweden, of 400 persons, 42% positive; Finland, of about 3,000 persons, 6% positive; in the United States, of about 700 persons in institutions, 10% positive. Total, 15,000 persons, 45% positive. Since 1937 the NIH anal swab, with a removable cellophane tip, has been used in the U.S.A. Using this swab 64% of 1,300 institutional persons, 31% of 3,800 persons in the general population, and 70% of 400 families were positive.
M.R.Y.

(368g) [This paper appears in full in J. Parasit., 26, 127-134. See Helm. Abs., Vol. IX, No. 102e.]

(368h) Chitwood & Chitwood report recent work in estimating the efficiency of soil fumigants for eradicating the bulb or stem nematode, *Ditylenchus dipsaci*, from soil. It is shown that physical constants, including boiling point, vapour pressure, cholesterol solvency and water solubility are correlated with efficacy and are apparently limiting factors. Chloropicrin, mesityl oxide, crotonaldehyde, butyraldehyde, ethylene chloride and mixtures of chloropicrin-ethylene chloride, chloropicrin-carbon tetrachloride and carbon tetrachloride-ethylene chloride gave the best results. Soil texture moisture and temperature also play a part in determining efficacy.
T.G.

(368i) [This paper appears in full in Bull. Soc. Path. Exotique, 32, 459-464. For abstract see Helm. Abs., Vol. VIII, No. 101f.]

(368j) 25,000 diaphragms of swine were examined for *Trichinella* by digestion technique. In 13,000 of these which were grain fed only 126 (0.95%) were positive and nearly two thirds contained less than 5 larvae per 100 g. of tissue. About 10,500 were garbage fed swine and of these 599 (5.7%) were infected, while 38% of these positives contained from less than 1 up to 5 larvae per g. of tissue. Only 21% of those detected by the digestion method were diagnosed by microscopical examination. The low intensity of infection of pigs in the United States explains the comparative rarity of clinical cases there.
R.T.L.

(368k) Szidat, from his studies on the development of trematodes, is of opinion that their phylogeny runs parallel to that of their hosts. The primitive trematodes have changed in conformity with the division of the primitive mammals into classes, orders, families and genera. Various causes were suggested for the loss of host specificity but are not indicated in the abstract now published. R.T.L.

(368l) At least 24 species of true Heterophyidae have now been recorded from man as natural or experimental infections. These are listed. A number of heterophyid-like flukes, but belonging to different families, have also been reported. R.T.L.

(368m) A brief report is given of the visceral complications of heterophyid infections observed in 15 cases out of 34 positive autopsies. In 14 cases there were heart lesions and in 13 of these cardiac symptoms were noted during life, and death was attributed to heart failure. R.T.L.

(368n) Cort relates the seasonal incidence of "swimmer's itch" in Northern Michigan to *Cercaria stagnicolae* and attaches little significance to *C. physellae* as few of these cercariae are discharged after 1st July when the swimming season starts there. R.T.L.

(368o) Usually schistosomiasis control will benefit indirectly from malaria control by reduction of mosquito breeding which may sometimes be modified slightly to reduce mollusc breeding. R.T.L.

(368p) [This paper appears in full in J. Parasit., 26, 179-181. For abstract see Helm. Abs., Vol. IX, No. 102k.]

(368q) Graham has studied several lines of *Strongyloides ratti* established in rats by the serial passage of single larvae. The characteristics of 3 of these lines, derived from single homogonic larvae, were preserved by continuous single larva homogonic passage. On the other hand, a line derived from a single heterogonic larva gave rise to new and distinct lines of *S. ratti*. It is considered that the indirect mode of larval development is a means of rejuvenating the species and performs a definite biological function rather than representing the mere persistence of an evolutionary vestige. W.P.R.

(368r) Our knowledge of the bionomics of the larvae of nematodes of domesticated animals explains the reason underlying traditional farming practice for the prevention of dangerous increases in the parasites. The chief factors concerned are those influencing the larvae on the ground, their longevity and mortality rate, and their intake by grazing. R.T.L.

(368s) Of the 22 helminth species in sheep in Canada *Haemonchus contortus*, *Oesophagostomum columbianum*, *Monodontus trigonocephalus* and *Trichostrongylus* spp. are of pathogenic importance. *H. contortus* and *O. columbianum* are only important in regions of relatively high rainfall and

temperature in June to August. The conditions influencing the occurrence of clinical helminthiasis in Eastern Canada are discussed and contrasted with those in other provinces.

R.T.L.

(368t) *Contracaecum spiculigerum* from cormorants was experimentally transmitted through young "guppies" and tadpoles. In naturally infected fish 5 moults were observed in the larvae within mesenteric cysts. In *Raphidascaris canadensis* from *Esox lucius* the embryonated eggs can infect fish and first instar dragonfly nymphs. In the fish the larvae grow in the liver but remain larval in character. Guppies are infected by feeding upon the infected nymphs. When, however, in the second and third instar nymphs, the nematode larvae are walled off by chitin and degenerate. Attempts to infect nymphs with *C. spiculigerum* were not successful.

R.T.L.

(368u) [This paper appears in full in Amer. J. Trop. Med., 20, 305-333. For abstract see Helm. Abs., Vol. IX, No. 4c.]

(368v) [This paper appears in full in Amer. J. Trop. Med., 20, 359-375. For abstract see Helm. Abs., Vol. IX, No. 64a.]

(368w) Shope believes that lungworm larvae from pigs with swine influenza harbour the influenza virus, that it persists in the larvae throughout their development in the earthworm and in the adult later. Only when a provocative stimulus is applied does the latent virus become liberated from the worms to infect the respiratory tract.

R.T.L.

(368x) Stoll illustrates by examples 4 types of host response to infection with *Haemonchus contortus* as a pure line acquired under natural conditions by 4 sheep and the fate of the survivors during the following season to exposure to numerous nematode species. He draws the conclusion that consideration of immunity against helminths requires consideration of its durability as well as of its effectiveness.

R.T.L.

(368y) A moderate infection with *Trichinella spiralis* induces a high degree of immunity in rats which limits the life of the adult worms to less than 2 weeks. It is retarded by severe initial infection or vitamin A deficiency. The resistance is against the intestinal stages of the parasite. Diarrhoea results in the evacuation of the majority of the larvae in the faeces. These are infective to other rats. It is suggested that an allergic mechanism may be the basis for the immunity.

R.T.L.

(368z) Otto points out that it is possible to immunize dogs against infection with hookworm by the administration of sublethal graded doses of larvae. The serum of such animals contains an antibody which causes precipitation round the mouth, vulva and anus of larvae suspended in it. Dietary deficiencies and concomitant disease have the power of preventing or breaking down this acquired resistance.

P.A.C.

(368ba) Chandler has found that overcrowding in a community of *Hymenolepis diminuta* in rats causes stunting in the size of the individual worms. He was unable to induce resistance by any of the usual methods of administration of specific material and assumes that any resistance to re-infection is due to overcrowding and may be concerned with the amount of nourishment available. P.A.C.

(368bb) [This paper appears in full in Chinese Med. J. Suppl., No. 3, 235-240. For abstract see Helm. Abs., Vol. IX, No. 264c.]

(368bc) [This paper appears in full in J. Infect. Dis., 64, 157-192. For abstract see Helm. Abs., Vol. VIII, No. 131a.]